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Practical Pharmacy Edition

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Editorial

STUDENT DEFERMENT

THE public health professions have a pressing, common problem in connection with the drafting of college students under the Selective Training and Service Act of 1940. The law provided that any student in full-time attendance at colleges who was drafted could be deferred, on his request, until the end of the college year. As these students were called before their local draft boards they were placed in Class I-*D* or I-*E* until this June when they will be reclassified.

Although deferment until the end of the college year may be sufficient for the greater majority of students of liberal arts colleges, there are additional factors to be considered in the case of students of pharmacy, medicine, dentistry, and other professions which render services necessary to the health, welfare, and interest of the nation.

The man who completes his pharmaceutical training is qualified to render important, specialized health services which are vital to the army and to the civilian population. The man who is taken out of the college of pharmacy before he has completed his professional education is just one more soldier. The army needs men, but it needs *trained men* even more; and it not only needs them today, but it will need them next year and every year as long as the present emergency lasts. How can the colleges continue their supply of trained pharmacists if their student bodies are disrupted by the draft? The uncertainty of being able to complete his education will discourage many a man from even entering college. It would seem the part of wisdom and foresight to defer these students until they complete their college work and can render the greatest possible service to the country.

Not only does the army need a steady supply of trained pharmacists but so does the public. The care of the civilian population during a national emergency is of the greatest importance. An epidemic among civilian workers in an airplane factory, a munitions plant, or similar vital spot would interfere with the production of defense materials and, in addition, would consume great amounts of drugs and medicines which might be needed for the armed forces. There must be no weakening in civilian pharmaceutical services.

If the colleges of pharmacy and medicine were graduating a surplus number of men today, the situation would not be so serious, as the draft probably would not cut down student enrollment below a point which would still take care of normal needs. For the past few years, however, colleges of pharmacy have been graduating less than the number of pharmacists necessary to fill normal replacements. It is estimated that some 2900 new pharmacists a year are needed to supply the normal demand; the colleges of pharmacy are graduating only about 1700 a year.

A shortage of pharmacists is reported in several states right now, and the conscription of student pharmacists can only aggravate this condition. If the shortage becomes too acute and pharmacists find it difficult, if not impossible, to obtain personnel for their pharmacies, there would inevitably be a demand for the lowering of educational standards in order to attract more men into the profession. Within a short space of time, the educational and professional progress of the past fifteen years could be wiped out.

In a time of emergency everyone wants to render his full measure of assistance

regardless of the cost or sacrifice, and no one asks or expects special privileges for pharmacal or medical students over any other students; but special consideration of the health requirements of the nation is absolutely necessary. It would seem that the country could be best served by keeping students of the health professions in college until their day of graduation and greatest usefulness.

Deferment of members of the faculties of colleges of pharmacy also seems wise. To the army, a college instructor who is drafted is one more pharmacist; deferred, he is the means of training hundreds of pharmacists. He is of greater value to the nation in his capacity as a teacher than he is as a pharmacist.

There are two approaches to this problem. The first is to convince local draft boards of the advisability of deferring pharmacy students, and the second is to amend the selective service law to provide such deferment. The first course is being pursued, and the second is under consideration.

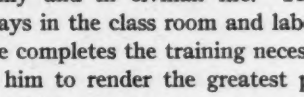
Elsewhere in this issue is a recent memorandum of the Deputy Director of the Selective Service System to State Directors. It points out the local draft boards' right to defer students in training for health occupations but there is some doubt as to whether this communication is sufficiently positive in itself to secure the proper action of the local boards. Additional data are expected to be supplied by the National Selective Service Headquarters to State Directors. A bill to provide the deferment of students in the health professions has been introduced in Congress, and this ASSOCIATION joined in presenting the case for the pharmacy student at hearings which were held.

At the present time the best course open to the pharmacy student is to apply to his local draft board for reclassification into Class II-*A* which consists of "necessary men" and those in training for health occupations. He should present the following facts to his local draft board.

1. The preliminary census report recently issued gave the number of pharmacies or drug stores as approximately 58,000 or approximately one pharmacy per 2200 persons throughout the country. These pharmacies are legally responsible for the filling of prescriptions, and the distribution of narcotics, dangerous drugs, and medicinal poisons.
2. The census of 1930 gave the number of pharmacists as 104,837 which is somewhat less than two per pharmacy. All state pharmacy laws require that a pharmacy must be in charge of a pharmacist at all times during which it is open for service.
3. The District of Columbia and all states excepting one require that applicants for registration as pharmacists must be graduates of a college of pharmacy giving the approved four-year course leading to the degree of Bachelor of Science in Pharmacy.
4. Competent insurance authorities advised some time ago that approximately 1150 pharmacists are lost by death each year and approximately 1750 by retirement and withdrawal from the field. The average number of graduates during the last three years has been 1695 annually.

In addition, the student should call attention to the memorandum of the Deputy Director of the Selective Service which is published in this issue of the JOURNAL, and should submit a statement from the college he attends certifying to the grade of work he is doing, his standing in his class and the length of time he has been studying pharmacy. He should also state definitely whether or not he intends to enter the practice of pharmacy after graduation. He should also file a copy of Bulletin No. 6 of the American Council on Education which deals with the question of deferment of men of science and mentions pharmacists specifically. This bulletin may be obtained through his college.

No false ideas of patriotism should make any pharmacy student or teacher hesitate to ask for deferment or to appeal the decision of his draft board, if necessary. Men trained in pharmacy are vitally needed in the army and in civilian life. The man who stays in the class room and laboratory until he completes the training necessary to enable him to render the greatest possible service to his country is no less a patriot than the man who carries a gun.



Sulfanilylguanidine

An Interview with E. K. MARSHALL, JR.
OF THE JOHNS HOPKINS UNIVERSITY

NEW SULFANILAMIDE DERIVATIVE IS SOLUBLE IN WATER BUT POORLY ABSORBED FROM THE INTESTINES, PERMITTING HIGH CONCENTRATION WITHOUT USUAL TOXIC SIDE-EFFECTS

WHILE searching for a sulfanilamide derivative which would be as effective as sulfapyridine against pneumococcus infections but would be less toxic to the patient, Dr. E. K. Marshall, Jr., and his associates of the Department of Pharmacology and Experimental Therapeutics of The Johns Hopkins University, Baltimore, last year developed several compounds which were soluble in water but were poorly absorbed from the gastro-intestinal tract.

This characteristic is not rare; Epsom Salt, for example, is water-soluble but is not absorbed from the intestine to any great extent. In these new sulfanilamide derivatives, however, Dr. Marshall had compounds which were highly active as antibacterial agents and they suggested the possibility of achieving a high concentration of the drug in the intestine to combat localized infections and yet have a low absorption into the blood and tissues and, therefore, a low toxic action in the body.

Sulfanilylguanidine appeared to be the most active of these new derivatives against various bacteria and Dr. Marshall's work centered around this compound.

LESS TOXIC

Using dogs, mice, and rabbits for experimental study, Dr. Marshall found this compound, when given by mouth, to be no more, and probably less, toxic than sulfapyridine and sulfathiazole. It is conjugated in the mouse, rabbit, and man, but not in the dog. It passes into the spinal fluid much more slowly than do sulfanilamide and sulfapyridine. It was found to be one of the few sulfanilamide derivatives which is as effective as sulfapyridine against the pneumococcus in mice; its administration reduced the number of coliform organisms in the intestinal flora of normal mice; and *in vitro* it was as active as, or more active than, sulfanilamide against various bacteria.

All of the properties of sulfanilylguanidine indicated that it should be of value in the treatment of intestinal diseases.

CLINICAL TRIAL

Dr. Marshall had to wait until summer, however, to evaluate this new drug clinically in the treatment of bacillary dysentery, the hot weather or tropic disease which is fatal to many young children. As luck would have it, there were comparatively few cases in Baltimore during the summer and fall of 1940, not enough to run a controlled experiment as to the efficacy of the drug, but every child admitted on the wards of the Harriet Lane Home who was thought to have bacillary dysentery or who had a non-specific diarrhea, received sulfanilylguanidine. An initial dose of 0.10 Gm. per kilogram was given, followed by a maintenance dose of 0.05 Gm. per kilogram every four hours until the number of stools was four or less, and finally a dose of 0.10 Gm. per kilogram every eight hours was administered for at least three days.

Seventeen cases of bacillary dysentery, in children ranging from 6 months to 4 years of age, and eight cases of other types of gastro-intestinal disease were treated. It was found possible to saturate the intestinal contents with the drug and yet have only a low concentration in the blood. In all but one case, the drug was effective, greatest improvement being shown in those cases where the treatment was started before the third day of the disease. Fevers dropped to normal

within 28 hours, and frequently much sooner. Within 12 to 36 hours after the drug was started there was a marked improvement in the condition. The diarrhea was checked in from 1 to 3 days and some of the children appeared practically well 24 hours after treatment had begun. These results, in a disease which usually runs a course of two or three weeks, were heartening.

No definite toxic effects were observed . . . no rashes and no drug fever. In a later study on adults, toxic reactions were suspected in 3 cases.

NEW CLINICAL STUDY

Sulfanilylguanidine has had its latest clinical trial in the hands of Dr. George M. Lyon, of Huntington, W. Va. Bacillary dysentery occurs endemically in the rural, mountainous, mining areas of the tri-state section of West Virginia, Kentucky and Ohio, and into this district Dr. Marshall sent a supply of the drug for clinical study. Twenty-four physicians and eight hospitals in this area coöperated with Dr. Lyon and over a period of three months alternate patients suffering from bacillary dysentery were treated with the new drug while the others received such treatment as is usually given in this disease. Only cases which could be considered moderately severe or severe were used for the study and it was required that each patient (*a*) have a "bloody diarrhea," (*b*) have a temperature of not less than 102° F., and (*c*) be treated before the end of the first week of the diarrhea.

In reporting the results of the study in the *West Virginia Medical Journal* (37 (2), Feb. 1941), Dr. Lyon says, "The most outstanding feature (of treatment with sulfanilylguanidine) . . . is the almost unbelievable improvement in the clinical picture of the patient which so frequently was observed within 24 to 48 hours after the administration of the drug. Its effect can truly be compared to that of sulfanilamide in infections due to some streptococci and to that of sulfapyridine and sulfathiazole in pneumonia due to pneumococci."

These physicians, who were accustomed to seeing cases of bacillary dysentery drag out over two, three, or more weeks under any form of treatment previously at their disposal, were astounded to see temperatures return to normal in 24 hours, stools normal in 72 hours, and patients essentially well in 3 days.

Twenty-three patients, mostly young children, received treatment in the West Virginia test. Of these, 18 were benefited. Toxic manifestations appeared to be much less frequent and of much less significance than those which accompany the use of sulfanilamide, sulfapyridine, or sulfathiazole.

Further clinical trials are under way at the present time in Puerto Rico, where bacillary dysentery is a year-round disease.

Dysentery has always been a problem of the army camp and the current expansion of the military forces in this country presents a real demand for the prompt completion of studies of this new drug so that it may be freely available.

Application for the introduction of sulfanilylguanidine as a "new drug" under the Federal Food, Drug and Cosmetic Act has not as yet been made. It awaits the results of further clinical reports.

PRE-OPERATIVE PROPHYLACTIC

The newest use of sulfanilylguanidine is as a prophylactic agent in surgical operations involving the large intestine, to reduce the possibility of infections.

Photograph by Bachrach

DR. E. K. MARSHALL, JR

DETAIL DENTISTS ON AMMONIACAL SILVER NITRATE

THIS NEW PHARMACEUTICAL, WHICH WILL BE OFFICIAL IN NEXT N. F., MUST BE FRESHLY PREPARED FOR USE, GIVING THE PHARMACIST AN OPPORTUNITY TO SERVE DENTISTS

DENTISTS are showing a great interest in the use of ammoniacal silver nitrate solution in the treatment of caries, and several papers on this subject have appeared in recent issues of journals of that profession. Here is a preparation that must be freshly prepared for use and, therefore, offers the pharmacist a real opportunity to render a professional service to the dentists in his community.

The Laboratories of the American Dental Association and the AMERICAN PHARMACEUTICAL ASSOCIATION have developed a standard method for preparing it which will become official in the next edition of the National Formulary.

Silver in some form is one of the oldest bactericidal drugs known to pharmacy, and is one of the best. It has been used in many forms: As 1–2 per cent silver nitrate solution it is dropped into the eyes of babies as a prophylactic against gonorrhea; as silver protein its solution in water is widely used in eye, nose and throat infections; as silver foil it has been used as a covering for wounds.

USE OF METALLIC SILVER

This latter use of silver in its elementary metallic form is most interesting because although it has never been satisfactorily explained, it has been proved effective. About forty years ago it was found that if metallic silver could be deposited in a fine state of subdivision in carious areas of the teeth or in infected root canals, it inhibited or destroyed bacteria.

The process of depositing metallic silver in a certain area may be accomplished by applying a solution of silver nitrate and reducing it with a strong artificial light, for silver compounds are extremely sensitive to light, a fact which is the very foundation of the process of photography. However, the reduction of silver nitrate by light is a rather long, tedious process for both dentist and patient, and it is necessary to speed up the reducing action by chemical means. This is accomplished in a two-fold manner: first, by treating a solution of silver nitrate with strong ammonia water to form an ammoniacal silver nitrate, or silver diammino nitrate, which is much more easily reducible; and second, by reducing this compound in a fine state of subdivision immediately after application by the use of eugenol or a 10 per cent solution of formaldehyde.

HOW TO PREPARE IT

The formula and method of preparation is as follows:

Silver Nitrate	73.17 Gm.
Distilled Water	24.50 cc.
Stronger Ammonia Water	60.30 cc.

(This formula makes a little less than 100 cc)

Powder some silver nitrate in a glass mortar, weigh out the required quantity and dissolve in water water (50° C.) measured from a burette or pipette graduated in tenths of a cubic centimeter.

Add the stronger ammonia water drop by drop from a burette or pipette. A black precipitate is formed immediately but on the continued addition of ammonia water it slowly dissolves. Add the ammonia water *until all but the last trace of precipitate is dissolved.* Stopping the reaction while there is still a small amount of precipitate left in the beaker makes sure that there is not an excess of ammonia in the finished preparation, which would be undesirable. The remaining precipitate is removed by filtering through filter paper.

The solution is not stable and should be made up fresh as called for by dentists. It should be dispensed in 2-cc. brown glass ampuls or in amber dropper bottles.

When the stronger ammonia water is added to the silver nitrate solution a black precipitate is formed immediately. This is the first step in the preparation of ammoniacal silver nitrate solution.

The finished preparation contains, in each 100 Gm., the equivalent of 28.5 Gm. to 30.5 Gm. of silver and 9.0 Gm. to 9.7 Gm. of ammonia. The formula for the reaction involved in its preparation is as follows:

$$AgNO_3 + 2NH_4OH \rightarrow Ag(NH_3)_2 NO_3 + 2H_2O$$

Use only transparent, uncolored crystals of silver nitrate.

Avoid touching the crystals with the fingers or other organic materials.

Weigh and measure quantities very accurately.

Use freshly distilled water.

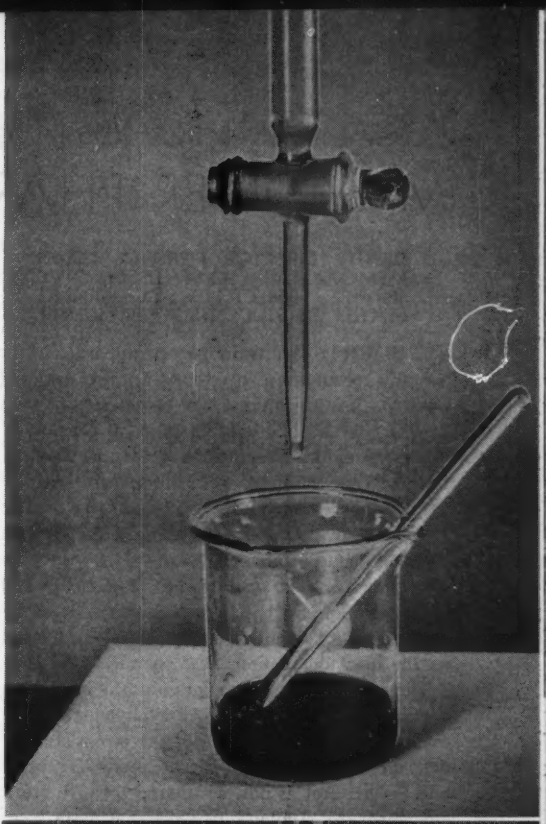
Use a clean glass beaker for the silver nitrate solution and hold a sheet of paper behind it to check the precipitate when the stronger ammonia water is added.

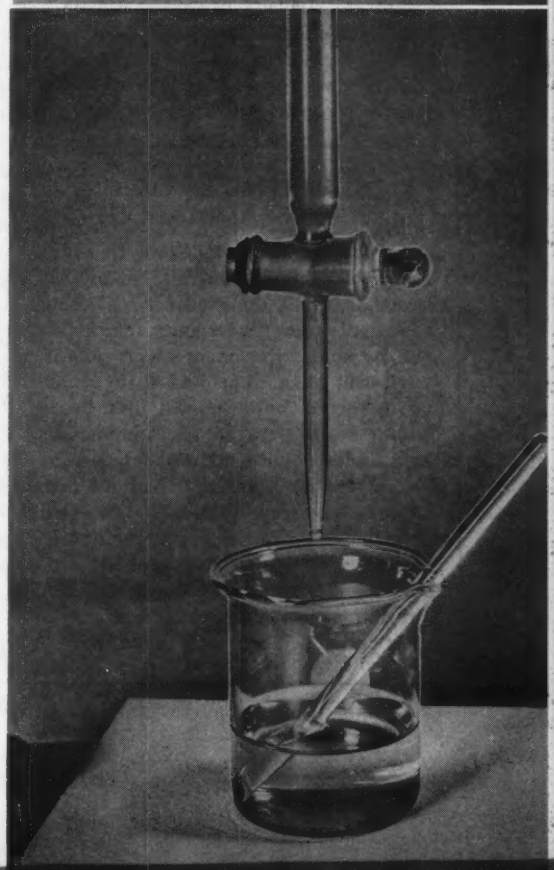
Store in clean amber bottles with glass stoppers. Avoid light.

Solution of Ammoniacal Silver Nitrate is known to many dentists as Howe's Solution. It is not to be confused with Tollans Reagent which is a product of silver nitrate, sodium hydroxide and ammonia water.

Some question was raised as to the formation of an explosive silver azide compound in the preparation of this solution but this theory has been disproved.

Several pharmacists, when they have advised dentists that they are prepared to supply ammoniacal silver nitrate to meet their needs, have developed a sizable demand for the item. If you are starting a program of closer coöperation with dentists in your neighborhood, this is a good product to use as an opening wedge to demonstrate your ability and the value of your services.





As the addition of stronger ammonia water is continued, the black precipitate slowly dissolves. The reaction is stopped before the last trace of precipitate is dissolved in order to prevent an excess of ammonia.

LOCAL DRAFT BOARDS MAY DEFER PHARMACY STUDENTS

DEPUTY DIRECTOR HERSHEY ISSUES MEMORANDUM TO STATE SELECTIVE SERVICE DIRECTORS CLARIFYING STATUS OF STUDENTS AFTER JULY 1

STUDENTS in training or preparation for any occupation necessary to the national health, safety, or interest may be deferred beyond July 1, 1941, by classifying them in Class II-*A* if the individual circumstances warrant such deferment, according to a memorandum sent by Deputy Director Lewis B. Hershey, of the National Headquarters of the Selective Service System, under date of March 7th, to State Directors to be transmitted by them to local draft boards. Such deferment may not be for more than six months but it may be renewed as the local board finds that such is justified.

Director Hershey's memorandum is important because many local draft boards have viewed the expiration on July 1, 1941, of the group student deferment provided in the Selective Training and Service Act as not permitting them to grant deferment to students beyond that date.

Those students who are found to be *necessary men* may be classified in Class II-*A* which consists of men who are deferred because of their civilian work in fields which contribute to the national health, safety, or interest. In deciding whether or not a student is a *necessary man*, the local board should give due consideration to the length of time which the student has been pursuing his course of study, his relative progress and standing in such course and his relative chances for employment or placement in the activity for which he is preparing, according to Director Hershey. In making its determinations, local boards are asked to consider the necessity of providing required replacements for, and additions to, the ranks of those men who are engaged in essential activities.

Commenting on Director Hershey's memorandum, the American Council on Education emphasizes the responsibility of colleges to supply local draft boards with carefully considered data regarding students whom they believe should be deferred as "potentially necessary men in preparation for an occupation essential to the national health, safety, or interest." On the basis of Director Hershey's memorandum, this would mean pharmacy students who are making good progress in their studies, who rank well in their classes and who are actually preparing themselves for the practice of pharmacy.

DEFERMENT FOR STATE EXAMINATIONS

In another letter to State Selective Service Directors, General Hershey has stated, "Among the students and other registrants now undergoing instruction will be some who on or about July 1, 1941, will have completed their course of instruction but who will then be *in training or preparation* for examinations held under public authority for persons desiring to be licensed in various professional and technical fields. To avoid great hardship to the registrant and in keeping with the national interest, local boards in their discretion may defer such a registrant in Class II-*A* for a relatively short period pending such examination."

MURRAY BILL HEARING

A bill has been introduced in the U. S. Senate by Senator Murray, of Montana, to amend the Selective Training and Service Law to grant deferment to students of medicine and dentistry until they are graduated.

Pharmacy was represented at the hearings by Dean H. Evert Kendig, of the School of Pharmacy of Temple University, who is chairman of this ASSOCIATION'S Committee on the Status of Pharmacists in the Government Services and is also president of the American Association of Colleges of Pharmacy; and by Dr. E. F. Kelly, secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION. Dean Kendig presented facts and figures concerning the profession of pharmacy, its personnel and its public health services, and asked that appropriate measures be taken to insure that bona-fide students of accredited schools and colleges of pharmacy will be permitted to complete their education and training in pharmacy.

TEXT OF DEPUTY DIRECTOR HERSHEY'S MEMORANDUM

MEMORANDUM TO ALL STATE DIRECTORS (I-10)

Subject: Classification of Registrants in Training or Preparation. (III)

The proper classification of students and other registrants *in training or preparation* constitutes one of the major problems of the Selective Service System. Marked concern has been manifested by educators and other interested persons with respect to the status of students after July 1, 1941, particularly those students enrolled in professional, scientific, technical or highly specialized fields of endeavor.

The group deferment of students provided by the Act expires July 1, 1941, and it will, therefore, be necessary for local boards to reclassify all students now in Class I-*D* or I-*E* prior to July 1, 1941. In reclassifying students, all facts in the possession of the local board at the time of the student's classification in I-*D* or I-*E* should again be given full consideration, together with any evidence of changed status which may have occurred since classification.

It is clearly the duty and responsibility of the local board to determine the classification of each registrant. The intelligent selection or deferment of registrants, as the national interest may require, is the fundamental purpose of the Selective Training and Service Act of 1940 and the Regulations prescribed thereunder.

In Paragraph 352 of the Regulations, it is provided that a registrant shall be placed in Class II-*A* if the registrant is found by the local board to be a *necessary man* in any industry, business employment, agricultural pursuit, governmental service or any other service or endeavor or *in training or preparation therefor*, the maintenance of which is necessary to the national health, safety or interest. Local boards shall give proper weight to this provision in dealing with the claims for occupational deferment of *necessary men* engaged *in training or preparation* for activities necessary to the national health, safety or interest.

Students or other registrants undergoing instruction may be deferred in Class II-*A* by the local board where the activity for which the registrant is *in training or preparation* is one essential to the national health, safety or interest, and the registrant is found to be a *necessary man*. The necessity of providing the required replacements for and additions to those men deemed by local boards as being engaged in essential activities should be considered by local boards in making their determination in individual cases. In determining whether or not a student is a *necessary man* within the provisions of Paragraph 351, the local board should give due consideration to such factors as the length of time which the student has been pursuing the course in question, his relative progress and standing in such course and his relative chances for employment or placement in the activity for which he is preparing. This latter factor may be evidenced by contracts of employment or other reasonable assurance that the registrant will engage in an essential activity.

The period of deferment in Class II-*A* may not exceed six months but such deferment may be renewed from time to time if the local board finds that such continuance is justified under the Regulations.

In applying these broad provisions there must be no deviation from the clear statutory prohibition against group deferments. The local board has full authority and responsibility for deciding whether or not a registrant is a *necessary man* and whether he should be selected or deferred. It must consider all of the evidence submitted in connection with each individual case and must decide each case on its particular facts.

Sincerely yours,

(Signed) LEWIS B. HERSHEY, *Deputy Director*

Midget Microbes

by RICHARD A. DENO, Ph.D.

ASSISTANT PROFESSOR OF BIOLOGICAL SCIENCES, RUTGERS UNIVERSITY COLLEGE OF PHARMACY

CRYSTALLIZATION OF THE VIRUS THAT IS RESPONSIBLE FOR TOBACCO MOSAIC DISEASE OFFERS NEW HOPE OF CONQUERING THE COMMON COLD AND OTHER DISEASES CAUSED BY THESE "SMALLEST KNOWN GERMS."

PASTEUR was trained as a chemist, but his position among the immortals of science was assured by his achievements in bacteriology rather than in chemistry, great as were his chemical attainments. Last month an American chemist was similarly honored for his accomplishments in the field of bacteriology. Dr. Wendell M. Stanley was awarded the Gold Medal of the American Institute of the City of New York for his outstanding investigations on viruses—the smallest known germs, termed by Dr. Thomas Rivers of the Rockefeller Institute, "the midgets of the microbe world."

Photo by Wide World

DR. WENDELL M. STANLEY

Dr. Stanley missed registration for selective service by exactly two months, yet the Gold Medal which the youthful American chemist received in New York is but one of the many honors and prizes which testify to the value of his researches.

PASTEUR'S DISCOVERY

The climax of Dr. Stanley's virus research was the crystallization of the virus responsible for a destructive disease of tobacco, the tobacco mosaic disease, but the roots of his researches extend back to the days of Pasteur. Pasteur discovered that the germ which causes hydrophobia is smaller than bacteria, that it can pass through the microscopic pores of earthenware filters—pores so small that they hold back bacteria. Because the filtrate from virus-infected material that has been passed through such filters still contains the virus with its disease-producing properties intact, such a germ is termed a filterable virus.

Another property of viruses that sets them apart from bacterias is the fact that they will not grow on agar, or gelatin, or in broth; they have to have living cells to develop. For this reason viruses are regarded as the supreme representatives of the parasitic mode of life—without a living host they invariably die.

The tobacco mosaic virus was one of the first to be studied, and it has been subjected to continuous experimentation for the period of over forty years that has passed since viruses were first known. More than any other single virus has this one contributed to the knowledge of the nature and properties of these germs. Now the work of Dr. Stanley points the way to clarification of the chemical structure of viruses in general and their place in the pattern of all living things.

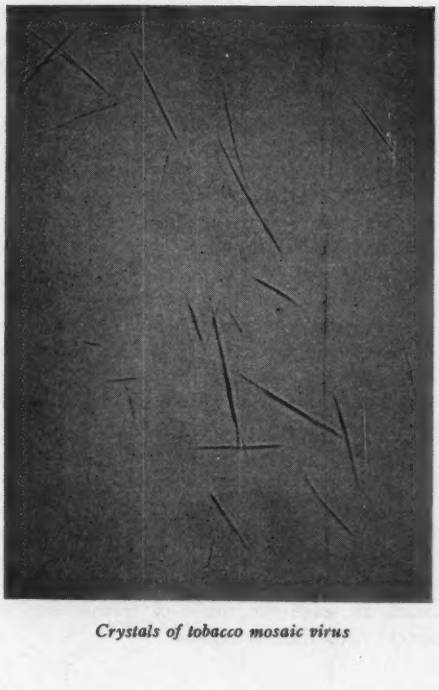
Why has this plant virus, important though it may be to growers of tobacco, received as much attention as has the virus responsible for smallpox, or yellow fever, or the common cold? Because the tobacco mosaic virus is easy to obtain in large quantities; it is very stable; it can be readily titrated; in short, it is an especially favorable virus for experimental work.

On the other hand, the virus which causes poliomyelitis—the disease that we Americans have learned so much about in the last few years—will grow only in a particular kind of monkey or in man, and in the experimental animal the virus is found in good concentration in only a very small portion of the body. This makes experiments on poliomyelitis virus very costly and presents a real bottleneck in the collection of data from research. Gradually these research bottlenecks are being removed. In the case of yellow fever virus, it has been found that the germ will grow in mice. Certain other viruses can be grown on chicken embryos.

VIRUS IN CRYSTALLINE FORM

Working at the Rockefeller Institute for Medical Research at Princeton, Dr. Stanley announced five years ago that he had successfully obtained tobacco mosaic virus in crystalline form, crystals which he considers to be the chemically pure virus. He does not claim to be the first to have crystallized this germ. To Nature he gives this honor, for in the cells of mosaic-diseased plants are found crystals which are also believed to be the pure virus. But Dr. Stanley is the first man to have secured a crystalline virus in quantities large enough for chemical analysis, and he has been quick to extend the results of his discoveries to the field of human virus diseases.

Analysis of the pure virus showed that it belongs to the same class of organic compounds as



Crystals of tobacco mosaic virus

do the proteins of the nuclei of all cells. The virus is a nucleoprotein. Furthermore, its molecule is of enormous size even when compared with the massive molecules of other proteins, and the molecule can be attacked at various points to modify its structure and change its properties. From his studies Dr. Stanley hopes to discover just what part of the nucleoprotein is essential to the production of disease.

The size of a single virus molecule can be determined with considerable accuracy by means of the electron microscope. This new instrument uses a beam of electrons instead of light, and magnetic fields take the place of lenses. Through the magic of the electron microscope, pictures of individual particles of viruses can be made, and their sizes and shapes determined. The tobacco-mosaic virus is rod-like in shape, and two or more molecules of virus may unite end-to-end to form a chain.

MEDICAL ASPECTS

For most of us who have had colds, influenza, measles, chicken pox, or the more dreaded virus diseases such as poliomyelitis, encephalitis, small-

pox, or rabies; the medical aspects of viruses are most important. Dr. Stanley points out the possibility that presumably normal cells may harbor viruses in latent forms, and that these may be stirred into action by a variety of provocative influences. Tumors in chickens and rabbits have been shown to be caused by viruses, and it is entirely possible that the cause of cancern in man may prove to be a virus that has been aroused to activity by some influence upon the cell.

Recent studies on the virus of swine influenza suggest another interesting possibility in the case of some human viruses. To transfer this virus from one animal to another, two kinds of worms are involved. In a hog that is infected with the virus it becomes transferred to worms found in the lung. These worms leave the hog and are ingested by earthworms in whom the virus may be carried in the soil for months. When a second hog ingests the earthworms, the virus is transferred to another swine host. The clarification of this life cycle has suggested new methods of attack to solve the riddle of transmission of certain virus diseases in man.

DEVELOPMENT OF VACCINES

Development and improvement of vaccines for virus diseases is continually going on. Three general methods for human vaccination are used. In the first, active virus is used to stimulate antibody formation but is combined with immune serum to reduce the risk involved in using an active germ. The second method makes use of an active virus of a related disease that is relatively harmless to man. This is the principle behind the use of cowpox vaccine to increase human resistance to smallpox. And in the third method, virus that has been inactivated, as by treatment with phenol or formaldehyde, is used. The object here is to so change the virus that it will not be dangerous when introduced into the body, but will still stimulate the formation of antibodies. At the present time this method is being widely used in vaccination against the virus of equine encephalomyelitis.

The difficulties met in attempts to improve on virus vaccines may be emphasized by the fact that the original Pasteur vaccine for rabies, developed 50 years ago, is still widely used in spite of its disadvantages and the widespread attempts that have been made to improve it.

ARE VIRUSES ALIVE?

For biologists, one of the most interesting aspects of Dr. Stanley's discoveries is that which poses the question: Are viruses alive or dead? The property of reproduction, increasing in numbers by nutrition and division, is considered a quality of life alone. This property is held by viruses and would lead one to classify them with the living. But all other living things are made of protoplasm, a complex mixture of nucleoproteins and many other substances, and Dr. Stanley has shown that a virus is a pure chemical, a nucleoprotein only. It has been suggested that the extreme parasitism of viruses—their inability to reproduce in the absence of living cells—is evidence that they originated from cells and are therefore life reduced to its simplest possible chemical nature. Others say that viruses are not alive; that they are lifeless chemicals which have that added property of reproduction. Either view focuses attention on the concept that everything must be either totally alive or totally dead.

Dr. Stanley suggests a third possibility. He points out the difficulties of sharply separating the living from the lifeless at the level of such minute things as viruses. He suggests that a series of structures of gradually increasing complexity—hydrogen, water, benzene, ergosterol, egg albumin, insulin, pepsin, various viruses, bacteria, simple animals, complex animals—all have certain properties in common; that the point in such a series where we can say, "Everything behind is dead, everything ahead is alive," is purely arbitrary. From such a point of view the principle of life does not originate suddenly but is inherent in all matter.

Such speculations are philosophical and from a practical point of view they are fruitless, but they are challenging to our personal concepts of life. However, the chemical and medical phases of the work by Dr. Stanley is most practical, and eventually should lead to the discovery of the cause and cure of influenza, the common cold, and many other scourges that are caused by these "midget microbes."

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THE AMERICAN
PHARMACEUTICAL ASSOCIATION
acquires
THE HUGH MERCER
APOTHECARY SHOP
at
FREDERICKSBURG, VA.

IN a simple ceremony in a little office George Washington once used, the deed to the historic apothecary shop of Hugh Mercer, in Fredericksburg, Virginia, passed into the hands of the AMERICAN PHARMACEUTICAL ASSOCIATION, on February 28th. The shop will be formally dedicated on April 30th, as part of the Garden Week festivities in Fredericksburg.

The ASSOCIATION acquired title to the property through the Friends of Historical Pharmacy, Inc., an organization created for the purpose of perpetuating this and other shrines of the profession. Officers of the organization are as follows: president, Wortley F. Rudd, Dean of the School of Pharmacy, Medical College of Virginia, Richmond; vice-president, Dr. Richard A. Deno, of the Rutgers University College of Pharmacy, Newark, N. J.; secretary and treasurer, Dr. E. F. Kelly, secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION, Washington; members of the board of managers: W. B. F. Cole, Commonwealth's Attorney, Fredericksburg; Roger Clarke, of Fredericksburg; Charles H. Lewis, Fredericksburg pharmacist; and Robert W. Rodman, Editor of the Practical Pharmacy Edition of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, Washington. Every member of the AMERICAN PHARMACEUTICAL ASSOCIATION becomes a member of the Friends of Historical Pharmacy, Inc., automatically, and can feel that he has a part in the restoration and preservation of this and other pharmaceutical shrines. Annual meetings of the new organization will be held the last Saturday in May, each year.

Dean Wortley F. Rudd, of the School of Pharmacy, Medical College of Virginia, receives the deed and key to the Hugh Mercer Apothecary Shop from Judge Alvin T. Embrey, representing the Citizen's Guild of Washington's Boyhood Home. Dean Rudd is president of the Friends of Historical Pharmacy, Inc., through which the AMERICAN PHARMACEUTICAL ASSOCIATION *acquired the shrine.*

Title to the apothecary shop was delivered to Dean Rudd by Judge Alvin T. Embrey, president of the Citizen's Guild of Washington's Boyhood Home, which has owned the Mercer Shrine since 1926. The Guild was originally organized to save the Mercer Shop and other historical landmarks from destruction. Having accomplished its purpose, it was dissolved as a corporation. It had offered the Mercer Shop to the AMERICAN PHARMACEUTICAL ASSOCIATION at the Richmond, Va., convention, last May and the Council appointed Dr. Deno chairman of a committee to study the offer and arrange details of the transfer of ownership. This involved the raising of sufficient funds to make necessary repairs and to provide for the maintenance of the shop on a self-sustaining basis.

Among the friends of the ASSOCIATION who generously responded to Dr. Deno's appeal for the necessary funds were Elmer H. Bobst, Bodeker Drug Co., Bristol-Myers Co., Turner F. Currens, Dr. H. A. B. Dunning, Emerson Drug Co., Henry B. Gilpin Co., Dr. J. Leon Lascoff, Eli Lilly, Dr. S. E. Massengill, National Association of Retail Druggists, Dr. E. L. Newcomb, Owens and Minor Drug Co., Parke, Davis & Co., S. B. Penick, G. A. Pfeiffer, Standard Drug Co., and the Virginia State Pharmaceutical Association.

The support of pharmacists, wholesale druggists, and manufacturers of Virginia was very substantial as the shop is a landmark of the Commonwealth.

The Mercer Apothecary Shop building is a one and one-half story dwelling house of attractive colonial design located at the edge of the business district of Fredericksburg, Va., one block from U. S. Highway No. 1—the main road between

Interior view of the Hugh Mercer Apothecary Shop, in Fredericksburg, Virginia. Here the purges, tonics, and prescriptions of another day were compounded.

Washington and Richmond. It was built early in the eighteenth century. The shop-room from which Mercer dispensed drugs is a large one with fireplace, antique drug fixtures, and an extensive collection of bottles, jars, mortars, and other pharmaceutical articles which are museum pieces.

The shop-room occupies about half of the first floor. The balance is occupied by a sitting room, hall and small library which was used at one time as an office by George Washington. A wing containing the kitchen extends from the rear of the building. Upstairs are two bedrooms, a hall and a small powder room. A basement extends under the entire building. In the rear is a well-ordered colonial garden.

The apothecary shop is one of a number of historical shrines in Fredericksburg, for it was here that George Washington's mother and sister lived, James Monroe had his law office and composed the Monroe Doctrine, and John Paul Jones lived.

HUGH MERCER

Hugh Mercer was born and raised in Scotland. While a fourth-year medical student he joined the cause of Prince Charles Edward Stuart who sought to assume the English throne. Prince Charles' attempted rebellion was routed by the British and his followers were forced to flee. Mercer took refuge with relatives in Aberdeen while he collected enough funds to leave the country. When this was accomplished he slipped away and sailed for Philadelphia.

He did not feel safe from the British in Philadelphia, however, and soon after his arrival he went west to the Scotch-Irish settlement of

Conococheague. The settlement was on the extreme frontier and suffered repeatedly from the horrors of Indian warfare, so Mercer saw service not only as a physician, but also as a member of a company of rangers organized to protect the community from redskin raids.

Mercer had been on the Pennsylvania frontier for eight years when the French and Indian War started. News that Major General Braddock, commander-in-chief of the English forces and troops in North America, was undertaking a personally directed expedition against Fort Duquesne heartened the inhabitants of the Pennsylvania frontier settlements. Braddock had two regiments of troops that had recently come from England and Mercer rode to Fort Cumberland to mingle with the soldiers and learn at first hand of conditions at home. He found out that the participants in the Scottish Rebellion had been pardoned and that he was a free man who no longer need hide from the British.

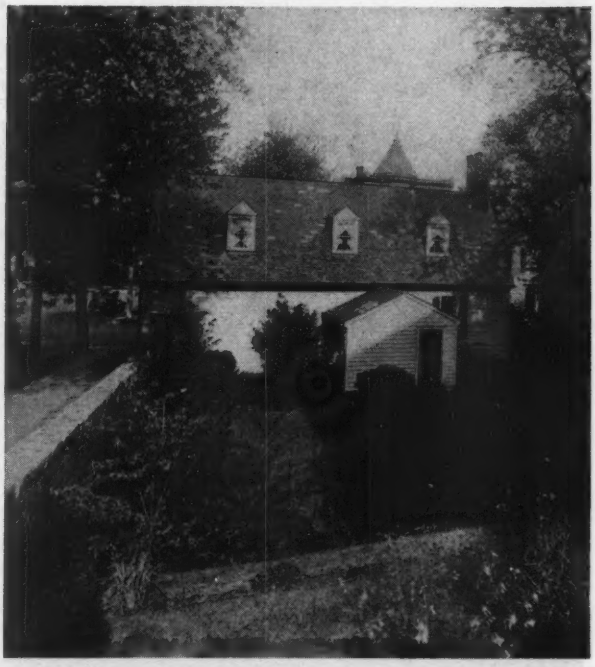
While at Fort Cumberland, Mercer met George Washington, who was serving as an aide to Braddock, and Dr. James Craig, Braddock's chief medical officer. The three became good friends and Washington and Craig urged Mercer to leave Pennsylvania and take up the practice of medicine in some more settled locality, suggesting Fredericksburg, Virginia.

From what he learned of Braddock's methods of attack, however, Mercer was pessimistic of the chances of success of the Duquesne expedition and he returned to his frontier home to help protect it. Braddock's defeat and death intensified the dangers of Indian raids and Mercer joined the militia, being appointed a captain. He commanded a company under Colonel John Armstrong, in the expedition to destroy the Kittanning camp which served as the principal base for the Indian scalping parties. In the siege he received a bullet in the wrist, became separated from the regiment with a few of his men, and was soon deserted by them.

For fourteen days Mercer traveled through the wilderness. His one arm was useless. He had no gun and no food, but he lived on berries, two dried clams, and rattlesnake meat which he found along his way, and he finally reached Fort Lyttleton and safety.

Mercer remained with the Pennsylvania Militia, soon being promoted to the rank of major, then to lieutenant colonel, and then to colonel. He was closely associated with Washington in the drive on Fort Duquesne which was

Right: View of the gardens behind the apothecary shop. Here Mercer grew many of the drugs he used in the compounding of medicines. Plans of the ASSOCIATION *include the restoration of the garden with such plants as were found in a colonial garden.*



Below: Bedroom of Hugh Mercer on the second floor of the shop.

Below left: Sitting room of the apothecary shop. To step into this room with its colonial architecture, its open fireplace and its antique furnishings, is to step back 165 years.

Officers of the Friends of Historical Pharmacy, Inc. Left to right: Robert W. Rodman, W. B. F. Cole, Va. Commonwealth's Attorney, Wortley F. Rudd, Charles H. Lewis, Roger Clarke, and Dr. Richard A. Deno. Every member of the AMERICAN PHARMACEUTICAL ASSOCIATION *becomes a member of this new organization automatically, and thus has a part in its work of restoring and perpetuating this and other pharmaceutical shrines.*

successful and when its name was changed to Fort Pitt he became the first commandant.

When his services were no longer necessary, Mercer was discharged and, remembering the advice of Washington and Dr. Craig, he set out for Fredericksburg, Va., to establish a new home for himself. As soon as Washington heard that Mercer had arrived he came to see him, presented him to his mother, introduced him to influential friends, and obtained his appointment as civilian doctor to the Virginia militia regiment. Mercer's practice grew and within a few years he married a Fredericksburg girl.

Conscious of the inadequate supply of drugs and medicines in the community, Mercer opened his apothecary shop in 1771, importing fresh drugs from England every six months. Washington, who conferred with Mercer on every trip he made to Fredericksburg, established a desk in one room of the shop and used it as his office.

When word of the battles at Lexington, Concord, and Bunker Hill was received in Virginia, trouble was already brewing over the action of Lord Dunmore, Royal Governor, in removing gunpowder from the magazine at Williamsburg. Companies of Minute-Men were organized and a few months later three Virginia regiments were formed.

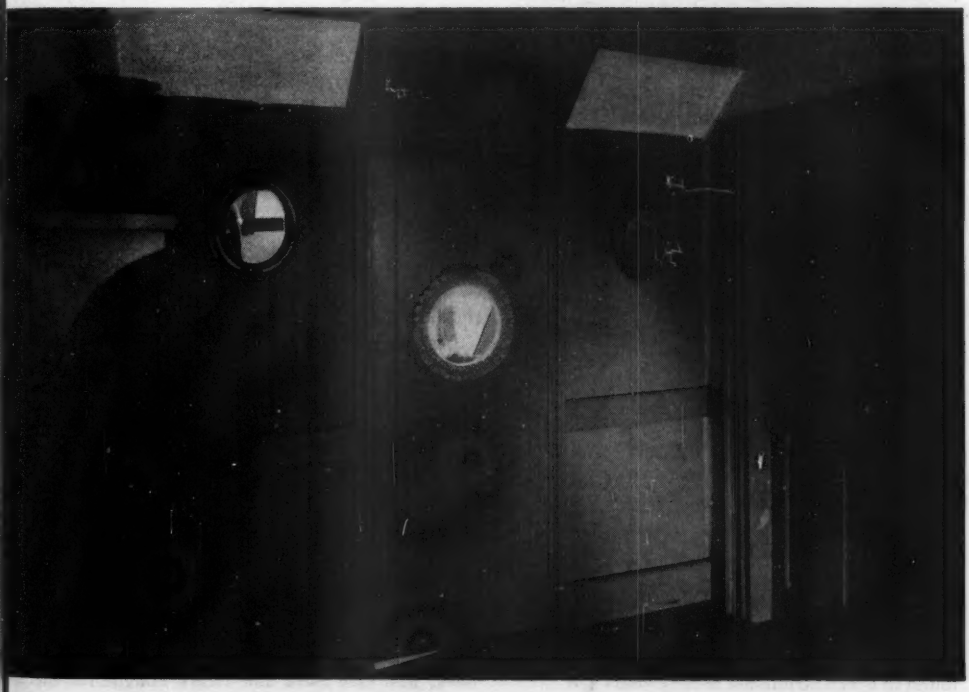
By January 1776 more troops were needed, and Mercer was elected colonel of a regiment to which was assigned the task of reorganizing the camp at Williamsburg. Washington was planning his campaign in New Jersey and he sent for Mercer through John Hancock, president of the Continental Congress. Mercer accepted the commission of Brigadier General and joined Washington at Philadelphia. He helped organize the troops and fought with Washington in New York and New Jersey. He was wounded in the Battle of Princeton and died a few days later.

WITH SWORD AND LANCET

Details of the fascinating story of Hugh Mercer's life are given in a new book, "With Sword and Lancet," by Joseph M. Waterman, of Parkersburg, W. Va., published this month by Garrett and Massie, of Richmond, Va. This book, priced at three dollars, is a glowing tribute to this surgeon, apothecary, and American patriot.

Through the maintenance of the apothecary shop in Fredericksburg, the AMERICAN PHARMACEUTICAL ASSOCIATION will keep alive the memory of Hugh Mercer. The thousands of visitors who come to this little Virginia town each year cannot help but be impressed with this shrine where drugs and medicines were dispensed for the prevention and relief of the ills of the public in Colonial days. The visitor who stands before the shelves which once held the bottles of purges, tonics, and other medicines prepared by Mercer cannot help but be filled with admiration for the contributions of this man and be reminded also of the importance of the pharmacist to the welfare of a community, yesterday, and today.

Hon. W. Marshall King, Mayor of Fredericksburg, welcomes the acquisition of the Mercer Shop by the AMERICAN PHARMACEUTICAL ASSOCIATION *through Dean Rudd.*



Powder room on the second floor of the shop. Here the colonial gentleman placed his head through the hole in the door to have his wig powdered.

Attwood OF JACKSONVILLE

THE STORY OF A BOY ON A FARM WHO BECAME INTERESTED IN THE ACTION AND USES OF DRUGS, AND WHO TODAY IS A SUCCESSFUL PHARMACIST AND THE FIRST VICE-PRESIDENT-ELECT OF THE AMERICAN PHARMACEUTICAL ASS'N.

WERE you born on a farm before the days of automobiles and telephones? If you were, you'll remember how ill a person had to be in those days before a physician was called. Doctors were pretty scarce in those lines, sometimes there were but one or two in a whole county, and a well-stocked family medicine chest had to be relied upon for the treatment of all but the more serious diseases.

Many a successful physician and pharmacist of today first became interested in drugs and medicines through the treatment of his family's ailments with the simple home remedies which were found in every farmhouse of fifty years ago.

One such pharmacist is J. K. Attwood. Raised on a farm near Darien, Georgia, one of nine children, he became fascinated with the action of drugs at an early age and, because of his interest, he was privileged to do most of the administering of medicines in his home. He it was who heated a brick and on it dropped Compound Tincture of Benzoin (Turlington's Balsam, as it was known on the farm), and officiated in the other traditional treatments of simple illnesses.

His was no casual interest in drugs. The days, weeks, and years which passed served only to strengthen his desire to know more about the action and uses of medicines in the prevention and treatment of disease and carried him to the point where today he conducts a highly successful pharmacy in Jacksonville, Florida, serves as president of the Florida State Board of Pharmacy, and has recently been elected first vice-president of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Mr. Attwood's first step in his career from family medicine purveyor to Jacksonville pharmacist was gathering Jimson Weed, Prickly Ash Bark, Red Oak Bark and Deers Tongue for the

general store, a typical country emporium which sold everything from "thread to coffins." This was the first money he actually earned.

When his family moved to Milledgeville, he attended the Georgia Military College for four years and worked in a drug store or a doctor's office every summer. He received a scholarship to the Atlanta School of Medicine, now Emery University Medical Department, and completed two years of study. He passed the Georgia Pharmacy Board Examinations in 1910 and accumulated a wealth of practical experience in drug stores of Georgia and Florida.

Mr. Attwood purchased his present pharmacy in 1917 and he has built it into a thriving professional organization that today employs five registered pharmacists, a salesforce of eight persons and a delivery staff of seven. Although primarily a prescription pharmacy, Attwood's carries an up-to-date stock of toilet articles and cosmetics. It does not have a soda fountain.

CAPABLE STAFF IMPORTANT

"It is impossible for any man to operate a store of any size alone, so it is imperative that he surround himself with a capable staff which is interested in pharmacy as a profession and desirous of rendering the type service that is essential in the development of professional pharmacy," says Mr. Attwood in explaining his carefully-developed organization.

"It is important that a pharmacist have a definite understanding with each member of the staff with regard to his or her responsibility. I have two head pharmacists, one is responsible for manufacturing, and the other for special detailing.

"Certain periods are set aside for manufacturing the various preparations we use in our prescription department.

"The head pharmacist, who is charged with the responsibility of promotional detailing, contacts the doctors on special preparations. When a new pharmaceutical which is of particular value to the pediatrician comes on the market the pharmacist will immediately become thoroughly familiar with the preparation and contact pediatricians. If it is a product of particular interest to the nose and throat men, they are contacted and in this way the various doctors are given information on products that we feel should be of particular interest to them in their particular work.

"The junior pharmacists are delegated such duties as keeping check on the expiration dates of biologicals, the orderliness of the prescription stock, the proper and careful double-checking of prescription labels, for the personnel of the delivery department. This latter point is a vital factor in a store handling a large prescription volume.

DIVISION OF RESPONSIBILITY

"This division of responsibility is carried on throughout the store. The office is in charge of one person with two assistants, and they in turn have definite duties. The front of the store is handled in like manner, one person being in charge of cosmetics, another in charge of stationery, magazines, and candy, and another in charge of household remedies. All buying, other than fill-in supplies, is handled by stock sheets showing the amount of stock on hand and the amount ordered at thirty- to sixty-day intervals. These blanks are secured from our wholesaler who has them printed in large quantities.

"I feel that any man who operates a drug store should employ apprentices and impress

J. K. ATTWOOD

upon them the responsibility and confidence that rest upon every pharmacist.

"If I were asked to state what was responsible for the small success that has been mine, I think I would stress the fact that I was thoroughly interested in pharmacy from the very beginning, and I have constantly endeavored to improve my knowledge and technique. I read drug journals incessantly and have always maintained an adequate pharmaceutical library. I receive at least six or eight drug journals and two or more medical journals.

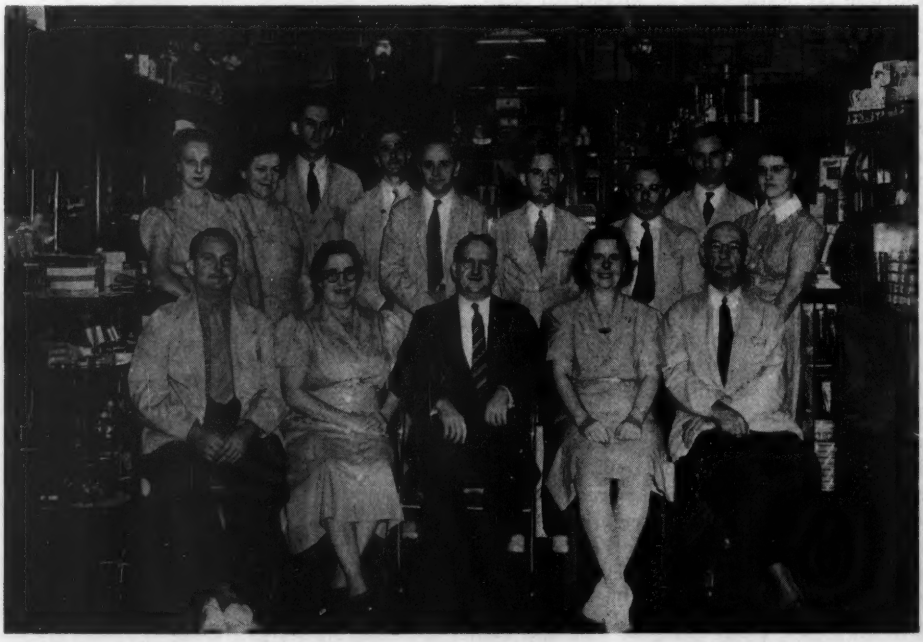
"We pride ourselves on service. To us this very flexible word means carrying the finest in pharmaceuticals, an adequate stock, being able to furnish information on practically any pharmaceutical preparation, and being able to supply biologicals and the newer recognized pharmaceutical preparations promptly."

A GOOD EXECUTIVE

Although there is no such thing as a "formula for success" in the operation of a pharmacy, Mr. Attwood has put his finger on one important factor in good management, namely, the pharmacist must be a good executive. He must employ competent men under him and be willing to place responsibilities on their shoulders in the knowledge that their duties will be well performed. Too many pharmacists make the mistake of thinking they have to do everything themselves and they waste their time attending to details which should be delegated to others.

AN AMERICAN CAREER

Farm boy to pharmacist, Mr. Attwood's career has been characteristically American. He is the counterpart of thousands of young men all over the country who were born and raised on farms and went on to become the leaders of industries and professions. To the AMERICAN PHARMACEUTICAL ASSOCIATION, as its vice-president-elect, he brings a wealth of practical knowledge and experience that will enhance this organization's service to the pharmacists of the country.



Mr. Attwood practices what he preaches concerning the importance of an adequate, capable staff. He employs five pharmacists, a salesforce of eight persons, and a delivery staff of seven.

Druggists' Digest

OF NEW FORMULAS, RECENT PHARMACEUTICAL DEVELOPMENTS, AND OTHER PROFESSIONAL DATA

A NEW SILVER PROTEIN

Mild silver protein preparations are used extensively in topical silver therapy but have several disadvantages, according to Robert D. Barnard, M.D., of the Ophthalmologic Clinic of the Chicago Free Dispensary and the Division of Head Specialties of the Chicago Medical School. These disadvantages he lists as follows:

Silver is extremely photosensitive and its salts are rather unstable to light, many of the silver protein preparations becoming astringent with the liberation of free silver ions.

Mild silver protein preparations in an aqueous medium are colloidal suspensions and their uniformity and duplication require delicate manufacturing technique.

The addition of electrolytes such as contact with blood, pus, or urine will "crack" some suspensions and this makes them unsuitable for bladder instillation.

The silver content of mild silver proteins is high, about 20 to 25 per cent, yet most of it is inert and wasted.

The color of most mild silver protein preparations is similar to that of tincture of iodine and one has been used for the other in error.

Many mild silver protein preparations develop free acid on standing and become irritating to mucous membranes.

Seeking a silver protein which would be free from these disadvantages, Dr. Barnard, with the coöperation of the Armour Laboratories, has developed a silver ferrihemoglobin which is stable for a long period of time, is uneffected by light, contains about one-fortieth of the amount of silver present in other mild silver proteins and makes a blood-red solution within the physiologic neutrality range of p_H.

Dr. Barnard has used the silver ferrihemoglobin in 373 patients with eye, ear, nose and throat conditions with satisfactory results in 73.4 per cent of the cases. He reports it to be as efficacious as other mild silver protein preparations and to be practically a specific for Morax-Axenfeld bacillus conjunctivitis.

The product is not as yet commercially available.

—*Clin. Med., 48, 1 (Jan. 1941), 11–12*

VALUE OF PERBORATE IN POISON IVY DISPUTED

A 10 per cent sodium perborate ointment does not detoxify the oleoresin of poison ivy, and such protection as this preparation gives is merely mechanical, Dr. Bedford Shelmire, of Dallas, Texas, reported in the *Journal of the American Medical Association* for February 22nd.

The use of sodium perborate in a vanishing cream base for protection against poison ivy was reported by Schwartz, Warren and Goldman, of the U. S. Public Health Service last July (*Pub. Health Rept.*, 55 (July 26, 1940), 1327).

Dr. Shelmire tested the protective properties of plain petrolatum, zinc oxide ointment with 10 per cent sodium perborate, 10 per cent calamine, 10 per cent zinc oxide in vanishing cream, and the 10 per cent sodium perborate ointment on persons sensitive to poison ivy, and found them of about equal, slight value.

He treated an ether solution of the oleoresin extracted from poison ivy leaves with powdered sodium perborate over a period of seven days and found that the residue left at the end of that time was still active. A saturated solution of sodium perborate was mixed with an equal amount of 1:100 ether dilutions of ivy oleoresins obtained from leaves, bark and roots and allowed to stand

for three weeks but was unable to render the ivy extract inert. The fresh milky sap of poison ivy was mixed with the 10 per cent sodium perborate ointment and allowed to stand for seven days with the frequent addition of perborate and the cream was active at the end of that period.

Dr. Shelmire, therefore concludes that the oleoresin of poison ivy deteriorates slowly, if at all, in the presence of liberal amounts of free oxygen.

SULFANILAMIDE IN THE TREATMENT OF PSORIASIS

Sunlight, or its ultraviolet substitute, usually clears up the cutaneous lesions of psoriasis, at least temporarily, and a period on the beach or under the sunlamp brings welcome relief to many sufferers from this disease which has thus far defied medical science.

In some cases, however, the patient's skin is not photosensitive and the summer sun or ultraviolet lamp is ineffective. For such patients, Dr. Louis Tulipan, of the Department of Dermatology and Syphilology of Bellevue Hospital, New York, has developed a treatment with sulfanilamide to sensitize the skin before irradiation.

Twenty-four hours before the patient is exposed to ultraviolet rays, Dr. Tulipan starts to administer 20 grains (1.3 Gm.) of sulfanilamide in 5-grain (0.32 Gm.) doses every four hours and to the lesions he applies a mixture of:

Coal Tar	10.0
Acetone	20.0
Benzene	70.0

A second application is made just before irradiation. The patient is exposed for 2 minutes at a distance of 30 inches from the lamp and as the skin begins to tan, in successive treatments, the time of exposure is gradually increased and the distance from the lamp decreased.

Using this new treatment on eleven cases which had resisted all other methods, Dr. Tulipan reports that every patient showed improvement within a week and most of them were free from lesions within a few weeks.

Dr. Tulipan stresses the fact that this treatment is not a cure but is an effective method of clearing up the lesions when all other measures fail. It is a radical measure and a temporary one, but is useful in those instances where the patient demands that the lesions be cleared up, such as before he wears a bathing suit, enters a sports contest or is married.

—*Arch. Derm. and Syphil., 17, 1(Jan. 1941)*

A PHYSIOLOGICAL NASAL SPRAY PREFERRED

One per cent ephedrine sulfate in physiological salt solution, at or near a p_H of 7.6, is a satisfactory preparation for ventilation of the nose and sinuses by vasoconstriction, according to Sidney N. Parkinson, M.D., of Oakland, California. This is because it does not damage the ciliary mechanism or the underlying epithelium, produces no side effects and does not sting or tickle when applied. The synthetic ephedrine-like drugs are equally effective if similarly prepared.

Included in the defense mechanism of the upper respiratory tract are the constant sweeping of the cilia and the steady outpouring of serous and mucoid fluid to keep the surface moist and humidify the inspired air. It is important, therefore, that local treatment be such as will not interfere with this activity.

Plain water when applied to nasal mucosa promptly stops all ciliary activity because of hypotonicity, while liquid petrolatum slows it down by lying as an inert blanket on the surface, according to Dr. Parkinson. Silver proteinates, being incompatible with salt solution, are dispensed in plain water. In the nose they are precipitated by the saline secretions, and slow down ciliary activity, he reports. Cocaine in more than 2.5 per cent strength, epinephrine in dilution of 1:5000, eucalyptol, menthol, thymol, zinc sulfate and antiseptic substances slow down or paralyze ciliary activity, he states. But most important of all is the damage to the lungs from mineral oil and silver proteinate aspirated during nasal treatment, as reported by Theodore Walsh, M.D., Washington University, St. Louis.

Dr. Parkinson uses a solution made by adding 1 per cent ephedrine and 0.68 per cent sodium chloride to distilled water or tap water. The addition of antiseptics or preservatives is neither advisable nor necessary. The solution is boiled and kept in boiled, screw-capped bottles. If distilled water is used, the solution will need to be

alkalinized and buffered at or near a p_H of 7.6, but if tap water is used it may not need adjustment as, in many areas of the country, it is approximately of the proper p_H.
—*Arch. Otolaryng., 32 (Nov. 1940), 659–661 Ibid., 23 (March 1936), 334–339*

HOW TO ADMINISTER NOSE DROPS

Medication administered by dropper for the treatment of nasal and sinal conditions may be made to reach the mucosa of the upper areas of the nasal chambers if properly administered. Sidney N. Parkinson, M.D., of Oakland, Cal., has described the "lateral head-low" position for this purpose.

"The patient is seated on a cot immediately adjacent to a stack of two or three pillows. He is then bent laterally on the pillows, the lower arm being kept at the side so as to rest beneath him, with the elbow flexed. With the body in a strictly sidewise position, the head is now bent downward (laterally) to as nearly up-side-down as possible. It is necessary that the lower shoulder be kept on the pillows, otherwise the tendency of the patient is to override until his shoulder rests on the cot. The ability to approach a perfectly vertical position of the head is about in proportion to the length of the patient's neck, but in any event it will be found that the olfactory area is down and level. Fluid placed in the nostrils now will readily gravitate to the superior nasal areas. The patient is instructed to breathe only through the mouth in order to avoid snuffing any fluid into the pharynx.

Before the patient arises, his face is first turned downward, allowing whatever fluid is in the nose to run out of the nostrils. It is unnecessary that the patient at any time get the slightest taste of the drug used. Small children may be turned laterally and, if necessary, the head held in the lap or between the knees. A few elderly plethoric persons seem unable to tolerate easily any head-low position."

Although the otolaryngologist is familiar with this method since it appeared in the *Archives of Otolaryngology*, 17 (1933), 787, many general practitioners perhaps have never seen it and will appreciate pharmacists calling it to their attention. Pharmacists should be familiar with the method in order that they may explain it to customers.

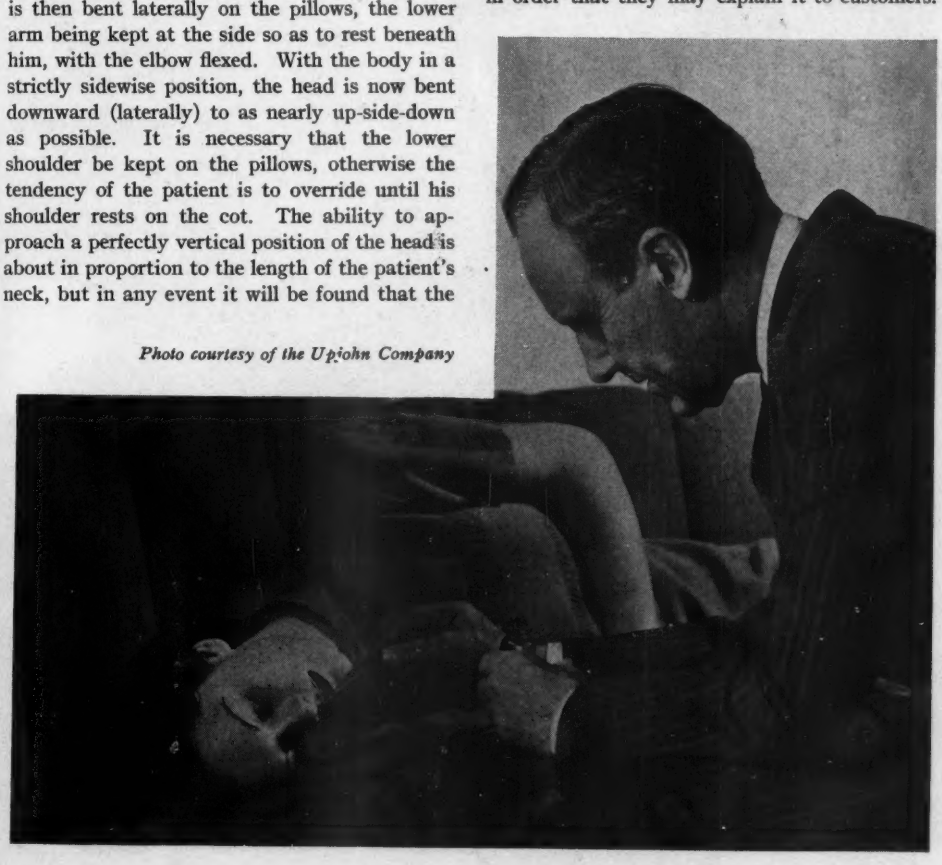
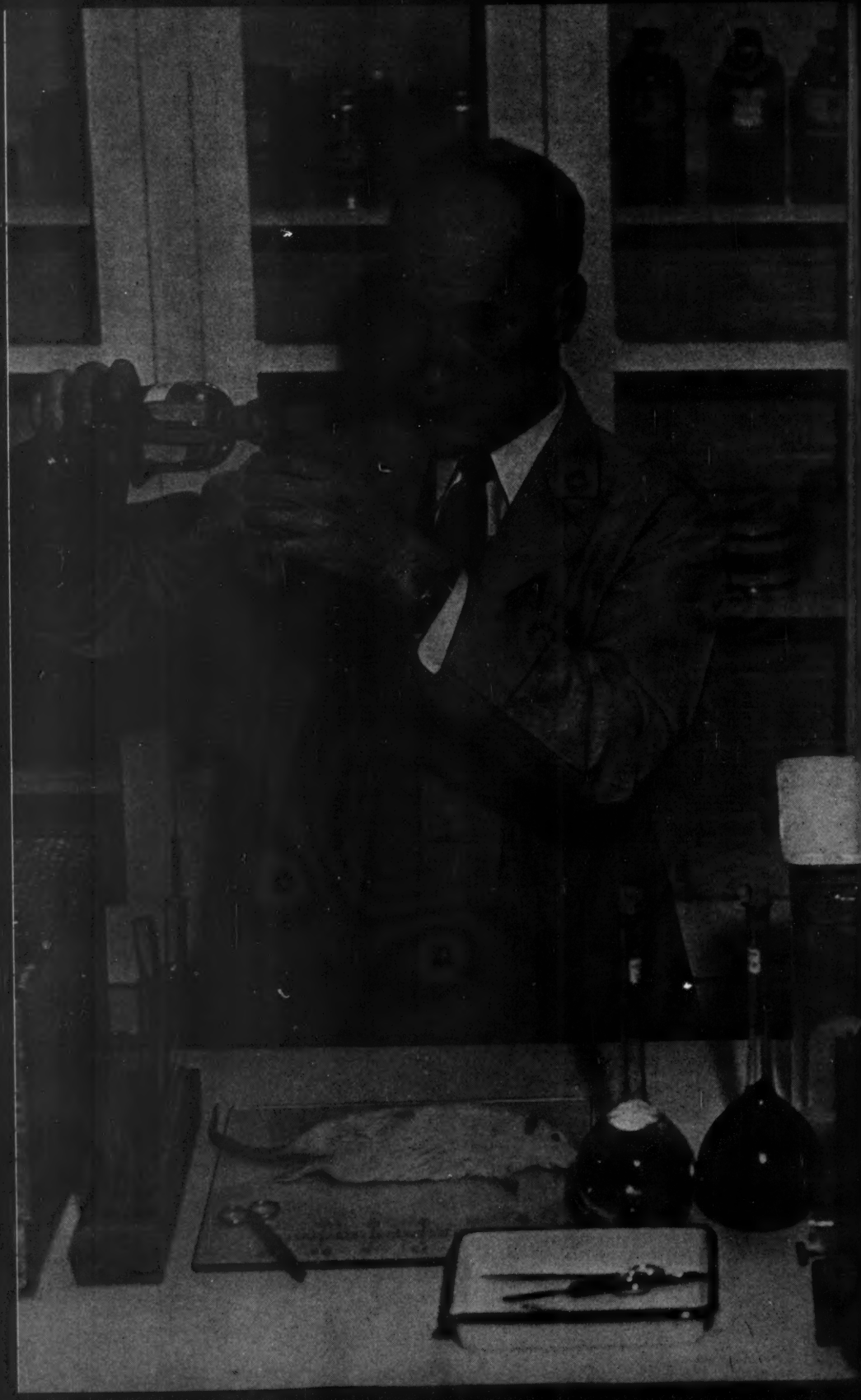


Photo courtesy of the Upjohn Company



TETRAIODOMETHENAMINE FOR USE IN ATHLETE'S FOOT

Tetraiodomethenamine, a chemical which any pharmacist can prepare from iodine and methenamine, is effective in the treatment of athlete's foot, according to Herman Sharlet, M.D., of New York, who developed the product in the Harriman Research Laboratories of the Roosevelt Hospital and described it in *Archives of Dermatology and Syphilology*, 40, No. 4 (Oct. 1939) 603. It is used in the form of a 0.5 per cent solution in flexible collodion.

The chemical may be prepared as follows: Make a 1 per cent solution of methenamine, U. S. P., in distilled water and a saturated solution of iodine crystals in 95 per cent alcohol. Place the methenamine solution in a beaker and add the iodine solution drop by drop from a burette, stirring constantly.

The tetraiodide compound is formed as brick-red crystals which settle to the bottom of the beaker. In its production, the biiodides and triiodides are first formed but they are not brick-red in color and they continue to take on iodine until the tetraiodide compound is formed. Complete iodine saturation of the methenamine is identified when free iodine is noted floating on top of the solution.

The tetraiodide crystals may be washed in water, as they are insoluble, and then spread on filter paper to dry. They should be stored in a dark bottle with a tightly fitting, wax-covered cork. On standing, some of the iodine leaves the crystal surface, giving the compound a bluish black color.

For purposes of calculation, 1.4 Gm. of methenamine in 140 cc. of distilled water react with approximately 6.5 Gm. of iodine dissolved in 82 cc. of 95 per cent alcohol to yield about 7.2 Gm. of tetraiodomethenamine.

Dr. Sharlit applies the collodion solution to the lesions morning and night for a week or ten days. With ether he removes the membranes formed over the lesions and inspects the skin, repeating the applications if necessary. He further suggests dusting the lesions with a talc containing 10 per cent of potassium iodide before applying the collodion solution as this directs the liberation of iodine toward the skin. He states that the tetraiodomethenamine releases its iodine more slowly than do other preparations of iodine. The preparation is said to relieve itching immediately after application, and makes a dry, clean dressing.

Here is a preparation which, although it is a little work to prepare, gives the pharmacist an opportunity to apply his professional skill in serving the physician.

PICTURE OF THE MONTH

X-ray and radium burns have long baffled physicians for they are highly resistant to treatment. First promise of an effective cure for these painful burns came in 1935 when two physicians reported the successful use of fresh juice of the leaf of Aloe vera. Since that date several physicians have reported the use of this drug in individual cases but no extensive research on the subject had been made until Tom D. Rowe, assistant professor of pharmacy at the Medical College of Virginia, became interested in the subject a year or two ago.

Aided by a grant from THE AMERICAN PHARMACEUTICAL ASSOCIATION, Professor Rowe is pursuing a chemical and pharmacological study of Aloe vera to determine, if possible, the constituent or constituents which are beneficial in the treatment of these burns. His work is being carried out at the School of Pharmacy of the University of Wisconsin, where he is studying for his Ph.D. degree, under the guidance of Dr. Edward Kremers and Dr. L. M. Parks.

Through such grants the A. PH. A. contributes to the continuing search both for new therapeutic agents and for new, more effective forms of known drugs.

SULFITES STABILIZE TANNIC ACID SOLUTIONS

Sodium sulfite and other sulfite salts are effective in preventing discoloration and loss of tannin in aqueous solutions of tannic acid, at least for a period of four months, according to K. P. DuBois, AMERICAN PHARMACEUTICAL ASSOCIATION Fellow, and C. O. Lee, Professor of Pharmacy, Purdue University.

Sodium bisulfite, sodium thiosulfate and potassium sulfite were found to be effective as antioxidants, although sodium thiosulfate allowed a slight amount of decomposition.

The minimum concentration of sodium sulfite required to prevent tannin loss was 0.1 per cent. Since sulfites are not therapeutically active in low concentrations, they may be used without fear of producing untoward physiological effects, and appear to be well suited for use in medicinal preparations. Tannic acid solutions are extensively used in burns, scalds, and various skin infections.

—JOUR. A. PH. A., *Sci. Ed.*, *30 (1941) 53–56*

SYRUP SUBSTITUTE

War-time restrictions on sugar have made it necessary for British pharmacists to find suitable substitutes for syrup as a sweentening agent for medicines. The following formula was suggested in the *Chemist and Druggist* for December 14th. It has a possible use in this country for diabetic medication.

Tragacanth powder	2.5 Gm.
Alcohol, a sufficient quantity	
Chloroform	0.25 cc.
Soluble Saccharin	0.25 Gm.
Distilled Water *q. s.*	100.0 cc.

SULFATHIAZOLE SNUFFS

English workers studying various means of preventing the transmission of bacterial and virus infections from one person to another report promising results from the use of sulfathiazole snuffs prepared by one of the following formulas:

NO. 1

Sulfathiazole	10
Menthol	5
Lycopodium	85

NO. 2

Sulfathiazole	10
Menthol	1
Magnesium Carbonate	89

NO 3

Sulfathiazole	10
Magnesium Carbonate	90

It is believed that an antiseptic inhaled as a snuff possesses the advantage of following the inspired air currents; is easily applied; and as some of the powder probably dissolves in the mucus, it may be possible to maintain an adequate concentration over a relatively long period by a few applications a day.

Using a control of 5 per cent menthol in lycopodium, the mucosa of several persons using the sulfathiazole snuff six times a day was examined. Staphylococci were greatly decreased and in some cases they disappeared entirely. In several cases diphtheroid bacilli disappeared.

—*Brit. Med. J. (1941) 145*

DON'T DUST SUPPOSITORIES

Lycopodium and talc as dusting powders on vaginal and rectal suppositories may lead to the occurrence of non-healing granulomatous lesions in the vagina or rectum, according to Drs. E. J. McCormick and T. L. Ramsey, of the Department of Surgery and Pathology, St. Vincent's Hospital, Toledo (*Jour. A. M. A., 116, (9) (Mar. 1, 1941), 817–821*).

Discovery of the offending nature of these two drugs followed a study of cases of unsatisfactory postoperative recoveries due to granulomatous inflammation in which these substances were found in the lesions. The lycopodium and talc reached the tissues from the gloves of the operating surgeon and his assistants, having been used as dusting powders.

SULFADIAZINE

Among the more promising of the newer sulfanilamide derivatives is sulfadiazine, or sulfapyrimidine.

This drug appears to be rapidly absorbed from the gastro-intestinal tract into the blood stream and the blood concentration from a given dose is 4 to 5 times higher than that produced by an equal dose of other sulfanilamide derivatives. Thus, smaller quantities are required to maintain adequate blood concentrations. Furthermore, the blood level falls more slowly after the drug is discontinued than it does with the other sulfonamides.

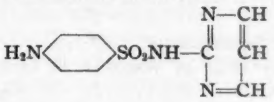
Apparently sulfadiazine is conjugated in the body to the extent of only about 10 per cent of

the blood concentration, whereas sulfapyridine is conjugated to the extent of 50 to 75 per cent, and, in addition, its acetyl compound formed in the body is much more soluble in urine than the acetyl forms of other sulfanilamide derivatives.

In mice, this new drug has been found effective against pneumococcic, streptococcic, and staphylococcic infections and in Friedlander's bacillus B infection.

No nausea or evidences of kidney, liver, or peripheral nerve damage have been reported and it offers promise of being an effective sulfanilamide derivative free from toxic side-effects.

The formula of the new drug is given as



The new drug has been administered to 100 patients at the Boston City Hospital without any evidence of severe toxic effects. The gastrointestinal symptoms and mental depression frequently noted in sulfonamide therapy were absent. One interesting phase of the Boston study is the observation that with sulfadiazine in severely ill patients, marked subjective improvement usually precedes the fall in temperature and pulse rate.

Bull Johns Hopkins Hosp., LXII (6) (Dec. 1940), 427–456

Proc. Soc. Exp. Biol. Med., 45 (2) (Nov. 1940), 734–738

Am. J. Med. Sci., 201 (1) (Jan. 1941) 106–115

Ibid., 201 (3) (Mar. 1941) 357–367

TRIPLE ANILINE DYE

Considerable interest is being shown in the triple aniline dye being used in England in the treatment of burns. The dye consists of the following:

Gentian Violet	0.25
Brilliant Green	0.25
Acriflavine	0.10
Distilled Water, *q. s.*	100.00

The dye is swabbed or sprayed on the burn and the area is completely dried with a current of warm air from an electric hair dryer. The dye is applied daily for five days, by the end of which time a lasting pliable tan has been produced Healing takes place under the tan and pealing occurs after about 10 days.

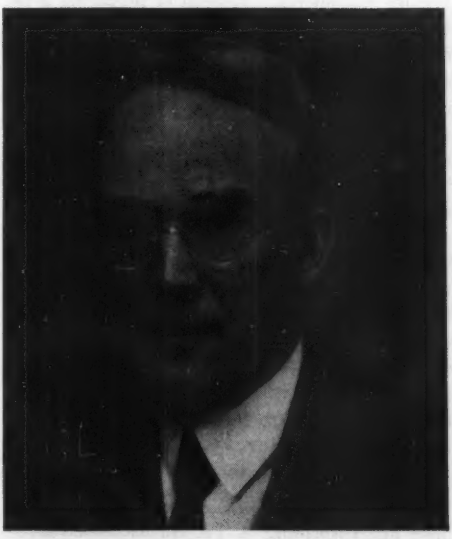
—Pharm. Jour., 146 (Feb. 8, 1941) 40

PHYSICIANS HONOR TOLEDO PHARMACIST

Because he has been a friend of the young physician starting up in practice, helping him to equip and outfit his office and extending credit, without carrying charges, until he got on his feet, Pharmacist Waldo Moffett Bowman, of Toledo, Ohio, was elected an Honorary Member of The Academy of Medicine of Toledo and Lucas County, on January 3rd. He is one of but six men who have received this honor in the past twenty-five years.

Mr. Bowman has been engaged in pharmacy since 1891 and established The Rupp & Bowman Company in 1895. This company, employing 52 people, maintains a strictly professional practice in prescriptions, sick room supplies, scientific materials, hospital supplies and surgical instruments.

He is a Life Member of the AMERICAN PHARMACEUTICAL ASSOCIATION and has served as President of the Ohio State Pharmaceutical Association, Chairman of the Health Committee of the Toledo Chamber of Commerce, Treasurer of the Toledo Public Health Association and of the Hospital Service Association of Toledo, Chairman of the Toledo Council of Social Agencies and Trustee of the Toledo Community Chest.



WALDO MOFFETT BOWMAN

FURTHER USES OF BENTONITE*

by DONALD G. HUBBARD and LEWIS G. FREEMAN

USING SIX PER CENT STOCK SOLUTIONS OF THIS CLAY IN WATER OR LIME WATER WILL SOLVE MANY PROBLEMS OF INCOMPATIBLE MIXTURES

ONE of the new items to be admitted in the forthcoming N. F. VII will be the mineral clay, "Bentonite." Dr. Bernard Fantus, at the Minneapolis meeting of the A. PH. A., in 1938, recommended this chemical as a medium for suspending Calamine and Zinc Oxide in Calamine Lotion. The N. F. Committee Circular of March 12, 1940, gives a monograph for this substance in which the following statement is included: "Bentonite is insoluble in water but swells to about eight times its weight when added to water and produces an opalescent suspension or paste. It is insoluble in organic solvents and does not swell in these."

For our investigation Bentonite Volclay Grade A Finest was used. This variety is grit-free and 90 per cent of its dry particles are 1 micron, the balance being not more than 5 microns. We found that in aqueous suspensions the particles became $^1/_{10}$ micron. Instead of preparing 2 per cent suspensions as recommended by Dr. Fantus, our stock suspensions are 6 per cent and the p_H of these is less than 10. In all cases the Bentonite is added to the water or lime water in a rotating electric mixer, producing a uniform suspension immediately which is far superior to that secured by bottle agitation. *Never add water to Bentonite or mix by trituration in mortar.*

Stock suspensions of 6 per cent Bentonite in both water and lime water were prepared and these were used for the insoluble powders and for olive oil and lime water type emulsions, with and without insoluble powders. Even though olive oil is used with lime water and insoluble powders and Boric Acid, no incompatibility is found when the powders are added to 6 per cent Bentonite suspensions and the oil added last. Furthermore, all of these products are *O/W* emulsions tested by electrical conductivity method.

It will be seen from the variety of formulas given that many incompatible problems are included. In all cases improved products can be made. The order of mixing is given with each prescription, bearing in mind that a rotating electric mixer is preferred and the powders added to Bentonite. If olive oil is in the formula, add it *last* unless a water-in-oil emulsion is desired.

Bismuth Subcarbonate	20.
Bentonite (6%) in Water or in Lime Water, *q. s.*	90.

Place the Bentonite suspension under a rotating electric mixer and add the bismuth subcarbonate.

Starch	2.
Bismuth Subcarbonate	20.
Bentonite (6%) in Water or in Lime Water, *q. s.*	90.

Place the Bentonite suspension under a rotating electric mixer, add the starch, and then the bismuth subcarbonate.

Bismuth Subnitrate	20.
Bentonite (6%) in Water or in Lime Water, *q. s.*	90.

Place the Bentonite under a rotating electric mixer and add the bismuth subnitrate.

Starch	2.
Bismuth Subnitrate	20.
Bentonite (6%) in Water or in Lime Water, *q. s.*	90.

Place the Bentonite suspension under a rotating electric mixer, add the starch, and then add the bismuth subnitrate.

Zinc Oxide	5.
Talc	5.
Sodium Borate	5.
Menthol	1.4
Alcohol	15.
Bentonite (6%) in Lime Water	100.

Place the Bentonite suspension under a rotating electric mixer, add the talc, then the zinc oxide, the sodium borate, and finally the menthol dissolved in the alcohol.

* Presented before the Section on Practical Pharmacy and Dispensing, A. PH. A., Richmond meeting, 1940.

Precipitated Sulfur	3.
Spirit of Camphor	5.
Stronger Rose Water	15.
Bentonite (6%) in Lime Water, *q. s.*	60.

Place the Bentonite suspension under a rotating electric mixer, then add the precipitated sulfur, the spirit of camphor, and finally the stronger rose water.

Zinc Oxide	
Calamine, aa	8.
Olive Oil	50.
Bentonite (6%) in Water or in Lime Water	50.

For an oil-in-water emulsion, place the Bentonite suspension under a rotating electric mixer, then add the zinc oxide, the calamine, and finally the olive oil.

For a water-in-oil emulsion, place the olive oil under a rotating electric mixer, then add the zinc oxide, the calamine, and finally the Bentonite suspension.

Zinc Oxide	
Calamine, aa	4.5
Salicylic Acid	0.5
Olive Oil	30.0
Bentonite (6%) in Water	50.0

Place the Bentonite suspension under a rotating electric mixer, add the salicylic acid, then the calamine, the zinc oxide, and finally the olive oil.

Camphor	
Menthol, aa	0.6
Phenol	1.2
Calamine	
Zinc Oxide, aa	7.2
Boric Acid	3.6
Olive Oil	48.0
Bentonite (6%) in Lime Water, *q. s.*	120.0

Place the Bentonite suspension under an electric mixer, to which add uniform mixture of the camphor, the menthol, the phenol, the calamine, the zinc oxide, and the boric acid; and finally add the olive oil.

If a water-in-oil emulsion is desired, start with the olive oil to which the uniform mixture of powders is added under a rotating electric mixer and finally add the Bentonite suspension.

Camphor	
Menthol	
Phenol, aa	0.03
Boric Acid	12.00
Bismuth Subnitrate	8.00
Olive Oil	
Bentonite (6%) in Lime Water, aa	45.00

Place the Bentonite suspension under a rotating electric mixer, to which add uniform mixture of the phenol, menthol, and the camphor; the boric acid, the bismuth subnitrate, and finally the olive oil.

Liq. Carb. Deterg.	12.0
Zinc Oxide	
Calamine, aa	7.5
Olive Oil	48.0
Bentonite (6%) in Lime Water	60.0

Place the Bentonite suspension under a rotating electric mixer, add the Liq. Carb. Deterg., the zinc oxide, the calamine, and finally the olive oil.

Zinc Oxide	
Calamine, aa	8.
Oil of Cade	6.
Olive Oil	
Bentonite (6%) in Lime Water, aa	50.
Lime Water	10.

For an oil-in-water emulsion, place the Bentonite suspension under a rotating electric mixer, add the zinc oxide, the calamine, the olive oil, the oil of cade, and finally the 10 cc. of lime water.

For a water-in-oil emulsion, place the olive oil under a rotating electric mixer, add the Bentonite suspension, the zinc oxide, the calamine, the oil of cade, and finally the 10 cc. of lime water.

Oil of Cade	3.
Zinc Oxide	12.
Glycerine	4.
Olive Oil	24.
Bentonite (6%) in Lime Water	90.

Place the Bentonite suspension under a rotating electric mixer, add the zinc oxide, the olive oil, the oil of cade, and the glycerine.

Calamine	12.
Phenol	2.
Olive Oil	
Lime Water, aa	45.
Bentonite (5%) in Liq. Ac. Borici, *q. s.*	240.

Place the lime water under a rotating electric mixer, add the 5% Bentonite suspension in the boric acid solution, then the calamine, the phenol, and finally the olive oil.

Liq. Carb. Deterg.	12.
Olive Oil	
Bentonite (6%) in Lime Water, aa	50.
Lime Water	10.

Place the Bentonite suspension under a rotating electric mixer, add the olive oil, then the liq. carb. deterg. slowly, and finally add the 10 cc. of lime water.

PHARMACISTS CITED FOR SELLING DANGEROUS DRUG PRODUCTS

COUNTRY-WIDE PROGRAM FOR ENFORCEMENT OF NEW FOOD, DRUG AND COSMETIC ACT LAUNCHED BY GOVERNMENT

PHARMACISTS in all sections of the United States are being cited by the Federal Food and Drug Administration on the charge of selling "dangerous drugs" or products labeled "to be used only by or on the prescription of a physician" over the counter. The Government's program of enforcement of the new Federal Food, Drug and Cosmetic Act is in full swing all over the country and inspectors are making daily calls on pharmacists to see if they can purchase cinchophen, benzedrine, sulfanilamide, barbituric acid derivatives, and other drugs which are considered by the Administration as unsafe for self-medication. Furthermore, if a product is labeled "to be used only by or on the prescription of a physician" the Government intends to see that it is not sold over the counter.

Reports of the first wide-spread survey by the Food and Drug Administration inspectors indicate that the greater majority of the pharmacists of the country are refusing to sell these dangerous drugs and in some cases, notably in the District of Columbia, nearly 100 per cent of the pharmacists are observing the law.

Conditions in some localities leave much to be desired, however, according to the Government. In college towns, particularly, some pharmacists are selling benzedrine sulfate to students openly. In one instance, the pharmacist is reported to have told the inspector that he couldn't sell him the full number of benzedrine sulfate tablets he asked for because students were buying them so fast he couldn't keep enough of them in stock.

DO NOT BE MISLED

Unfortunately, many pharmacists have been misled concerning the law and the aggressiveness with which the Government will enforce it. Some have ignored the "prescription use legend" and the warnings which have appeared in the drug journals because either they felt that they were immune from prosecution since they are engaged in intrastate commerce or they didn't think that the Government would get around to enforcing the law against retailers for a few years.

THE LAW

The Federal Food, Drug and Cosmetic Law contains three provisions which have particular bearing on the problem of dangerous drugs. The law states that a drug is misbranded if:

(1) adequate directions for use are not given in its labeling;

(2) adequate warnings are not given in its labeling against its use in those pathological conditions or by children where its use may be dangerous to health, or against unsafe dosage or methods or duration of administration or application;

(3) it is dangerous to health when it is used in the dosage, or with the frequency or duration prescribed, recommended or suggested in the labeling thereof.

THE PHARMACIST'S JUDGMENT

Although the Food and Drug Administration has, at various times, expressed its opinion concerning certain drugs, the warnings it believes necessary, its conception of what constitutes adequate directions, and its beliefs concerning unsafe dosages, the Administration does not have the authority to declare a drug dangerous to health, to decree a specific warning statement to be inadequate, or to promulgate official "safe" dosage tables. It does not have the power to order any drug to be sold only on prescription. It is not charged with the responsibility of issuing "official" lists of drugs which should not be sold over-the-counter. The list of drugs which accompanies this article, while we believe it to be accurate, is not to be considered an "official" list.

It is up to pharmacists to judge whether or not a particular drug is dangerous to health when it is used in the dosage, or frequency, or duration recommended in its labeling; and whether its label bears adequate directions and adequate warnings.

The Administration is charged with the enforcement of the law, and its only basis of procedure is to bring action against those acts which, in its opinion, violate the law. The Administration may be correct in its opinion and be upheld by the courts, or it may be incorrect and be overruled by the courts. The Administration will base its prosecutions on its opinions, but anyone who disagrees with the opinion has the full right to challenge them by trial in the courts.

It may be argued that the Food and Drug Administration has authority only over drugs in interstate commerce and therefore it has no jurisdiction over the pharmacist dealing in intrastate commerce. The distinction between what constitutes interstate and intrastate commerce, at the present time, is the subject of considerable controversy. The Administration believes it does have jurisdiction over the sale of drugs, once they have been in interstate commerce, until they reach the ultimate consumer. Future court decisions will confirm or deny this authority.

Every pharmacist must decide for himself whether he wishes to observe the law and its interpretation by the Food and Drug Administration or contest them in court.

During the period since the new law was enacted, the Food and Drug Administration has expressed its opinion on several groups of drugs which, directly or indirectly, place them in the category of articles that are believed to be unsafe for self-medication and which, therefore, should be dispensed only on prescription.

The Administration has expressed the opinion that for certain drugs, including sulfanilamide and its analogues, amidopyrine and cinchophen, it is impossible to devise adequate dosages and directions for use which will be safe for self-medication. The dosage and directions for use of these drugs, in the opinion of the Administration, can be determined only by the physician after a careful consideration of the individual patient's condition. Dosage of the sulfonamide drugs, for example, is based on the maintenance of a definite concentration of drug in the patient's blood—a factor only the physician in attendance can determine. Therefore, if it is impossible to devise adequate directions for use for such drugs, it is impossible to sell them over-the-counter without them being misbranded under the law. The Administration has expressed the opinion that dinitrophenol cannot be used safely even by the physician.

A little over a year ago, W. G. Campbell, Chief of the Food and Drug Administration, prepared a memorandum for his district officials setting forth a list of drugs with indications concerning the nature of warning statements which the Administration felt were satisfactory. Here again, these warning statements represented only the opinion of the Administration and were not regulations issued under the law.

In the case of a number of drugs, the Administration felt the warning statement should include a note to the effect that the product should be used only under the direct supervision of a physician. Only in rare instances would a patient who is under the direct supervision of a physician be sent by him to a pharmacy to buy a patent drug over-the-counter. In most, if not all cases, the physician would give a prescription for such a drug and provide specific directions for its use.

It would be ridiculous to think of selling a product over-the-counter and telling the customer, "Here is the product you asked for but be sure and do not take it except under the supervison of a physician." Yet that is what the pharmacist would be doing if he sold products bearing this type of warning label over-the-counter. Therefore, it follows that if the pharmacist is to govern himself in accordance with the opinion of the Food and Drug Administration, he will dispense drugs which bear this warning phase only on prescription.

D. C. PHARMACISTS

In its survey, the Food and Drug Administration could find but one Washington, D. C., pharmacist out of 100 who would sell a "dangerous drug" over-the-counter. The pharmacists of the District of Columbia are governed directly be federal laws and, therefore, the Food and Drug Administration has immediate jurisdiction over their actions. This is most helpful to pharmacists throughout the country for they can profit by the procedures adopted in the District with the coöperation of the Federal Government. The Food and Drug Administration has been most helpful to the pharmacists of the District and has helped to develop a set of rules for their guidance.

The District of Columbia pharmacists decided that when dangerous drugs are sold on prescriptions, the pharmacist should follow a three-point procedure.

1. Attach a "Cannot be refilled" label to the container.
2. Mark prescription "Do not refill."
3. Refill only on the specific authorization (written, verbal, or telephone) of the physician and then not more than twice. When refilling on authorization, record the date, hour, and method of authorization and the compounder's name on the back of original prescription and indicate whether it is the first or second refilling. A new prescription, naturally, is not to be considered a refill.

Based on the rules developed by the District of Columbia Pharmaceutical Association and supplemented with subsequent expressions of opinion by the Food and Drug Administration, the list of drugs which should be dispensed only on prescription, appearing on the following pages, has been prepared. In each case an effort has been made to provide the basis for the inclusion of the particular drug.

The list is not "official." There is no such thing as an "official" list. Several pharmaceutical associations have published similar lists of so-called *dangerous drugs* which should not be sold over-the-counter, and the impression may have been created that such lists have been issued officially under the Federal Food, Drug and Cosmetic Act or that the drugs listed have been banned by governmental decree. Such is not the case, although these lists do offer sound guidance to the pharmacist in complying with the law and are a helpful activity on the part of these associations.

DANGEROUS DRUGS

ACETANILID

Preparations which provide for a dosage of more than 5 grains a day, or more than $2^1/_2$ grains in 3 hours, may be dangerous to health.

ACETANILID AND BROMIDES

Preparations which provide a dosage of more than 5 grains of acetanilid and 15 grains of bromides a day, or more than $2^1/_2$ grains of acetanilid and $7^1/_2$ grains of bromides in 3 hours, may be dangerous to health.

ACONITE

Should be used under the supervision of a physician.

AMINOPYRINE

Adequate, safe directions for lay use cannot be devised. Therefore, it cannot be labeled to avoid misbranding.

AMMONIATED MERCURY OINTMENT

If this preparation contains more than 5 per cent of ammoniated mercury and is to be used frequently as, for example, in a bleach, it may be dangerous to health.

ANTIPYRINE

Preparations which provide for a dosage of more than 15 grains a day may be dangerous to health.

ASPIDIUM

As an anthelmintic, the Administration believes that therapeutically potent doses are not safe for indiscriminate distribution.

BARBITURATES

Adequate safe dosage, and directions for lay use cannot be devised, hence it cannot be sold over-the-counter without being misbranded.

BENZEDRINE SULFATE

Adequate, safe dosage, and directions for lay use cannot be devised, hence it cannot be sold over-the-counter without being misbranded. *This does not apply to benzedrine inhalers.*

BROMIDES

Preparations which provide for a dosage of more than 30 grains of any one or a combination of the bromides in a day, or more than 15 grains in 3 hours, may be dangerous to health.

CANTHARIDES

When used internally it should be administered under the supervision of a physician.

CARBON TETRACHLORIDE

As an anthelmintic, the Administration believes that therapeutically potent doses are not safe for indiscriminate distribution.

CHENOPODIUM

As an anthelmintic, the Administration believes that therapeutically potent doses are not safe for indiscriminate distribution.

CHRYSAROBIN

Should be used only under the supervision of a physician.

CHRYSOPHANIC ACID

Should be used only under the supervision of a physician.

CINCHOPHEN

Adequate, safe dosage, and directions for lay use cannot be devised, hence cannot be sold over-the-counter without being misbranded.

COLCHICINE

Should be used only under the supervision of a physician.

COLCHICUM

Should be used only under the supervision of a physician.

DIGITALIS

Potent doses have a cumulative action and may lead to disastrous effects upon the heart and circulation. Should be used only under the direct supervision of a physician.

DINITROPHENOL

The Administration does not believe that this drug can be administered safely, even on prescription.

EMETINE

Should be used only under the supervision of a physician.

EPINEPHRINE

Solutions of 1 per cent or stronger may be dangerous to health.

IPECAC

Preparations which provide for a dosage of more than 10 grains a day may be dangerous to health.

MERCURIC CHLORIDE OINTMENT

This preparation, if it contains more than 0.2 per cent mercuric chloride and is to be used frequently as, for example, in a skin bleach, it may be dangerous to health.

NEOCINCHOPHEN

Adequate, safe dosage, and directions for lay use cannot be devised, hence cannot be sold over-the-counter without being misbranded.

PHOSPHIDES

Should be used only under the supervision of a physician.

PHOSPHORUS

Should be used only under the supervision of a physician.

RADIUM

Should be used only under the supervision of a physician.

SANTONIN

As an anthelmintic, the Administration believes that therapeutically potent doses are not safe for indiscriminate distribution.

SQUILL

Potent doses have a cumulative action and may lead to disastrous effects upon the heart and circulation. Should be used only under the direct supervision of a physician.

STROPHANTHUS

Potent doses have a cumulative action and may lead to disastrous effects upon the heart and circulation. Should be used only under the direct supervision of a physician.

SULFANILAMIDE

SULFAPYRIDINE

AND

SULFATHIAZOLE

Dosage must be determined in relation to concentration in the blood of the particular patient. Adequate, safe dosage and directions for use cannot be devised.

STRYCHNINE

Preparations that provide for a dosage of more than $^1/_{20}$ of a grain a day may be dangerous to health.

TETRACHLORETHYLENE

As an anthelmintic, the Administration believes that therapeutically potent doses are not safe for indiscriminate distribution.

THIOCYANATES

Should be used only on the supervision of a physician.

THYMOL

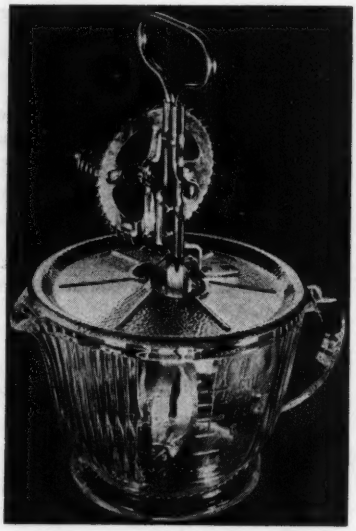
As an anthelmintic, the Administration believes that therapeutically potent doses are not safe for indiscriminate distribution.

THYROID

Adequate, safe dosage and directions for use cannot be devised, hence it cannot be sold over-the-counter without being misbranded.

Here's how we do it!

DISPERSING BENTONITE



Colloidal clays, such as bentonite, which absorb considerable water are a bit difficult to disperse.

The usual method of dispersing bentonite, in small amounts, is to place the required amount of water in a beaker and then sprinkle the bentonite on the surface, allowing it to soak up and sink to the bottom. A little more bentonite is sprinkled on the surface of the water every three or four minutes until it all has been added, and the suspension is allowed to stand for one or two hours.

The process of sprinkling the bentonite on the surface of the water a little at a time is effective but is time-consuming, particularly if the pharmacist has other things to do. An ordinary egg-beater, such as can be purchased for twenty-five cents in any variety store, is an efficient utensil to obtain a rapid dispersion. The water is placed in the bowl, the bentonite added in two or three portions, and the mixture is beaten for a few minutes between each addition.

PRESCRIPTION RECORD

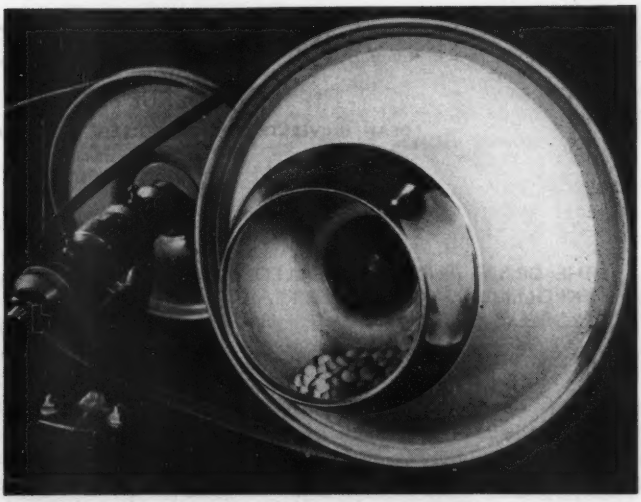
New customers of the Goss Professional Pharmacy, East Orange, N. J., receive the small folder with their prescriptions shown below. Space is provided for the date, number of the prescription, and the doctor's name to be filled in by the pharmacist. The patient fills in the type of medicine, whether it was for a cold, upset stomach, etc., and the card is kept in the home medicine cabinet in order that the information is available in case the bottle is lost and the patient wishes the prescription refilled.

Date	Number	Doctor	Type of Medicine

NEW ITEMS

Physicians receive a tremendous amount of literature concerning new prescription pharmaceuticals and the busy man does not always have time to familiarize himself with the details of these new items.

A California pharmacist has placed a small shelf near the telephone in his prescription department and uses it to display the newest in pharmaceutical specialties. When a physician drops in to use the phone he sees the products on display, picks them up, reads the labels and literature, asks the pharmacist a question or two, and often starts prescribing one or more of the items—and patients are sent to the pharmacy which the physician knows has the products in stock.



TABLET COATER

To pharmacists who are developing their professional services to include the small-scale manufacture of tablets, the above tablet coater, developed in the laboratories of the AMERICAN PHARMACEUTICAL ASSOCIATION, will be of interest. The coater is made from the aluminum top section of a Silex-type drip coffee apparatus. It is fastened to a large grooved disk and connected by belt with an electric motor.

AN EFFECTIVE PRESCRIPTION WINDOW

A mid-western pharmacist makes an annual window which dramatizes the extent of his prescription practice and which has proved most effective. The window tells not only the number of prescriptions he has compounded during the previous twelve months, but it breaks down this figure into the following groups:

Number of powder papers used.
Number of ointment jars used.
Number of prescription bottles used.
Number of pills dispensed.
Number of capsules used.
Number of suppositories dispensed.
Number of corks used.
Number of labels used.

The figures are accompanied with displays of bottles, labels, empty capsules, pills, powder papers, etc., and the familiar symbols of the prescription department, the mortar and pestle, graduate, pill tile, etc. Such figures would be even more impressive if the pharmacist could translate them in terms which are familiar to the layman, as, for example, how large a space would be filled with the number of powder papers used during the year, or how long a line the number of labels used would make.

UNLISTED TELEPHONES

Many pharmacists have at least one telephone in their prescription rooms for the exclusive use of physicians who wish to phone in prescriptions. Such phones are not listed in the telephone directory but all physicians are given the number. A pharmacist always answers the phone. The system lessens the possibility of the doctor getting "the busy signal."

TRAIN AN APPRENTICE *NOW*

by R. A. KUEVER

DEAN, UNIVERSITY OF IOWA COLLEGE OF PHARMACY

THE DRAFT AND LOW COLLEGE ENROLLMENTS FORECAST A REAL PROBLEM OF INADEQUATE HELP

DURING the coming months, if not years, there are bound to be many vacancies in the retail pharmacies of the country. Already calls are coming in for replacements because of the Selective Service and Training Act which affects every profession, vocation and trade throughout the land. Moreover, graduates with Bachelor of Science in Pharmacy degrees from accredited schools have an opportunity to enter the army as commissioned officers if they are otherwise able to qualify, and this may further deplete our pharmaceutical force. Still another problem is the fact that young men are being tempted by high salaries to go to work in factories turning out defense materials instead of going to college.

This is no temporary situation. With a world at war and a powerful program of aggrandizement in Europe, we are bound to develop an increasingly powerful army and navy of our own into which we must feed a specialized and intelligent manhood recruited from our professional ranks.

SOLVING THE HELP PROBLEM

What, then, is the solution for the retail druggist with respect to his help question?

This is an ideal time to select an apprentice—some high school or junior college boy or girl in your community. Make it no hit-and-miss or haphazard affair. Go at it systematically. Be sure that the applicant is interested or may become interested in pharmacy. Give him an aptitude test to determine his fitness. Ask him to get recommendations from his teachers with reference to his capabilities.

Bear in mind that any young person who serves the public successfully must possess the qualities of intelligent and forceful young manhood or womanhood. Inquire into the applicant's character for that is a matter of prime importance. If he has stability, honesty and reliability, he can go far toward helping you solve your help problem.

Much has been written of personality, but nowhere is it more important than in the service of the public in the drug store where you must know how to handle people and to live with them. Professional morale is also a necessity, so bear in mind that in the selection of an apprentice there must be a real pride in this particular business and a desire to coöperate whole-heartedly.

There is always room for argument about the best time for the period of practical experience necessary before the licensing examinations. Just now there seems to be an increasing number of reasons for starting that time of service before matriculating in college. This will bridge the gap for the druggist who finds replacements difficult. It will eventually send more capable and practical students into the schools of pharmacy for a professional training.

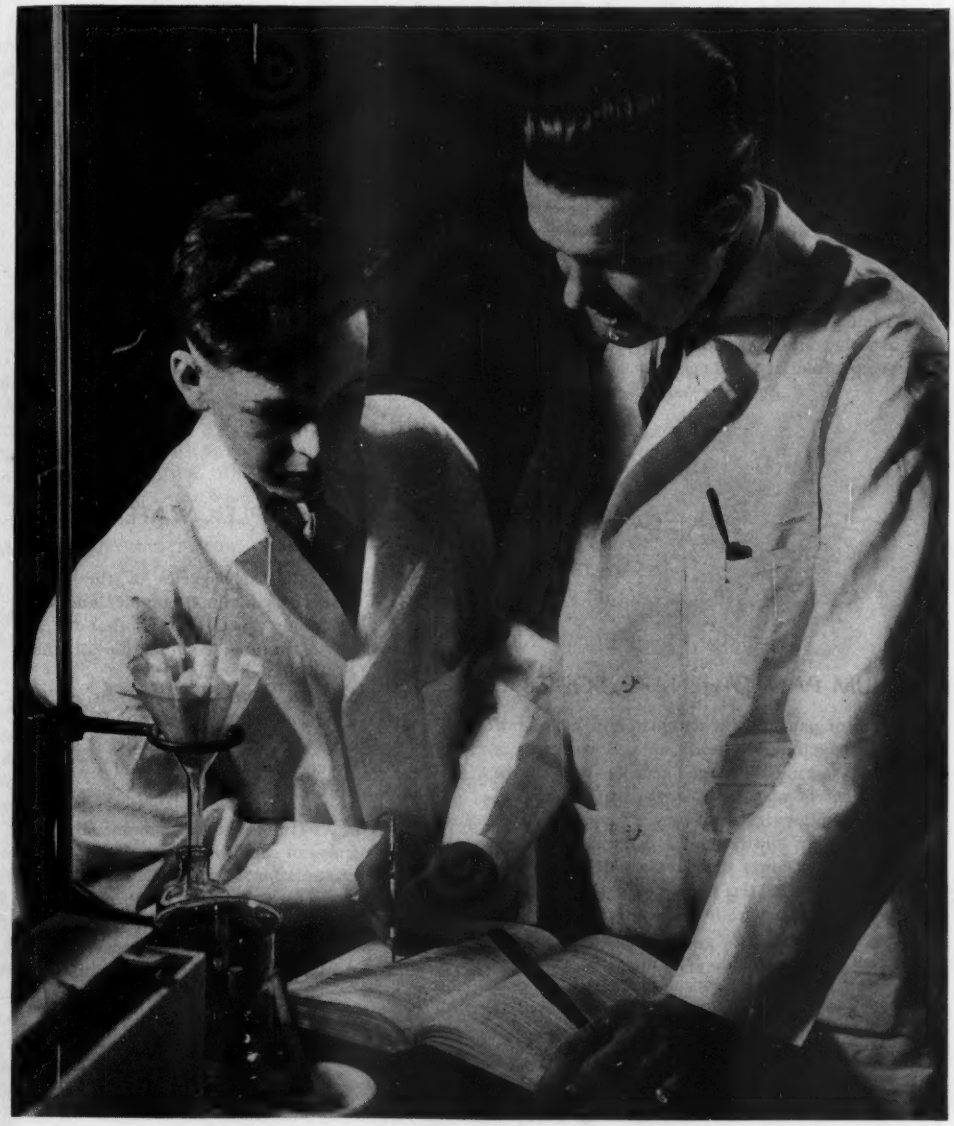
Young men and women, selected carefully and trained precisely as apprentices during their high school or junior college years, will have more of the character and moral fiber so necessary for successful pharmacists when they have completed their pharmaceutical education. In addition they will be grounded in a sense of accuracy and trained in neatness and precision that is most valuable. They can acquire further experience during summer vacations while they are in college.

MUTUALLY BENEFICIAL

This apprenticeship will provide mutual benefits for employer and apprentice. For the employer it will be a partial solution of the help problem which may reach in the near future more serious proportions than anyone knows at present. For the apprentice it is the answer to such questions as: Do I want to be a pharmacist? Should I make pharmacy my life's work? Do I like it well enough for that? Have I the necessary qualifications and aptitude to be successful

in the pharmaceutical area? It will also, in due time, enable him to have an income from which portions may systematically be set aside and saved to prove invaluable when the formal program of pharmaceutical education is undertaken.

So, if you are facing the prospects of inadequate help, locate an energetic youngster of the right stuff and begin now to give him methodical training as an apprentice. The joy and satisfaction you will eventually take from the apprentice's progress and his loyalty to you and your drug store will be another remuneration well worth having.



NEW PRESCRIPTION SPECIALTIES

LYGRANUM

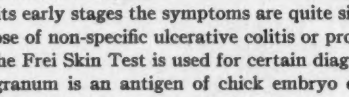
Lymphogranuloma venereum is a venereal disease, now considered third in incidence, due to a filterable virus transmitted by contact. It has an incubation period of two or three weeks and produces an inflammation of the lymph glands of the groin, inflammation of the colon and rectum, enlargement of the female genitalia, and stricture of the rectum in the male.

In its early stages the symptoms are quite similar to those of non-specific ulcerative colitis or proctitis and the Frei Skin Test is used for certain diagnosis.

Lygranum is an antigen of chick embryo origin for use in the Frei Test. It is claimed to have the advantages of greater potency, purity, and uniformity over material prepared from clinical lesions or infected mouse brain which heretofore has been used for this test.

Lygranum and its control are packed together, each in vials containing enough for ten tests, which costs the pharmacist $4.40 per set.

E. R. Squibb & Sons, New York, N. Y.



CALCIUM PANTOTHENATE, SQUIBB

The use of pantothenic acid, vitamin B_6, one of the filtrate factors of the vitamin B complex, is still in the experimental stage but it has been shown that the content of this substance in the blood of persons having severe deficiency diseases, such as pellagra, beriberi and riboflavin deficiency, is from 23 to 50 per cent lower than in normal persons and that with a rise in the pantothenic acid content there is a simultaneous increase in the riboflavin content of the blood.

Calcium Pantothenate, Squibb, is supplied in two forms: in miniature capsules of 10 mg. for oral use packaged in bottles of 50, costing $3.89, and as an aqueous solution of 50 mg. per cc. for parenteral administration in 5 cc rubber diaphragm capped vials, costing $1.77.

E. R. Squibb & Sons, Inc., New York, N. Y.

LUTOCYLOL

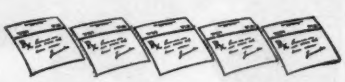
Experimental and clinical studies have shown that anhydrohydroxyprogesterone, given orally, produces the same biologic effects as an oily solution of progesterone injected intramuscularly.

Lutocylol is Ciba's trade name for this substance. It is insoluble in water and glycerin and less than 1 per cent soluble in alcohol, ether and fatty oils such as peanut oil and sesame oils.

It is used in the prevention of menorrhagia and metrorrhagia, habitual or threatened abortion and for the relief of dysmenorrhea due to corpus luteum hormone deficiency.

Lutocylol is offered in tablets of 5 mg., in boxes of 12, costing the pharmacist $3.00; and tablets of 10 mg., boxes of 12, costing $5.40.

Ciba Pharmaceutical Products, Inc., Summit, N. J.



VITAMIN B COMPLEX WAFERS WITH VITAMIN C

It is believed that deficiencies of the water-soluble vitamins, the vitamin B complex and vitamin C, are commonly associated and that the administration of a suitable combination of these factors is advisable in many cases.

To meet this need, E. R. Squibb & Sons, of New York, has introduced Vitamin B Complex Wafers with Vitamin C, each of which contains 2 Gm. of special high potency brewers' yeast and 7.5 mg. of crystalline ascorbic acid. Each tablet represents:

100 U. S. P. XI (Int.) units of thiamine (B_1),
150 micrograms of riboflavin (B_2),
130 micrograms (approx.) of pyridoxine (B_6),
800 micrograms (approx.) of pantothenic acid,
150 U. S. P. XI (Int.) units of ascorbic acid (C),
1.1 Gm. protein, 1.6 Gm. carbohydrate, 0.1 Gm. fat and 0.1 Gm. of mineral (ash).

The wafers have a malted milk flavor and are very palatable. They are offered in bottles of 50 and 100, costing the pharmacist $1.26 and $2.26, respectively.

E. R. Squibb & Sons, New York, N. Y.

A.B.M.C. OINTMENT

Circulatory disturbances accompanying attacks of arthritis cause considerable pain which can be relieved with suitable rubefacient counterirritants.

A.B.M.C. Ointment, intended for this purpose, contains acetyl-beta-methylcholine chloride, 0.25 per cent, menthol, thymol, eucalyptol and methyl salicylate in an emolient base. A thin film of this ointment is spread, without rubbing, over the affected part and heat is applied for 20 minutes to produce a slight redness.

A.B.M.C. Ointment is available in one-ounce tubes, packed one dozen to a carton, listing at $12.00 a dozen tubes subject to usual discounts.

John Wyeth and Brother, Philadelphia

NEGATAN' LILLY

It has been estimated that 70 per cent of women who have borne children, and 20 per cent of those who have not, suffer at one time or another from disease of the cervix, such as laceration, erosion or cervicitis. Such conditions may result from injury during childbirth or from other causes. Infection, with staphylococcus, streptococcus, or *B. coli*, is perhaps the prime factor in cervicitis and many cases persist for years without spontaneous healing.

'Negatan' is a highly acid chemical compound, an interaction product of formaldehyde and meta-cresol sulfonic acid, which is protein precipitating, germicidal and styptic. It is a water-soluble, colloidal product of indefinite chemical composition.

In cases of erosion and cervicitis the solution is painted on the diseased area and a gauze wick, dipped in the solution, is placed in the cervical canal and held in place with a tampon or light gauze packing. Treatment is administered twice weekly except during menstruation.

In cases of *Trichomonas vaginitis* the vaginal surfaces are painted with a 1:10 dilution of 'Negatan' and a tampon saturated with the same strength solution is inserted. Suppositories of 'Negatan' are used nightly between weekly visits to the physician.

Note: Because of its high acidity, 'Negatan' will destroy fabrics with which it comes in contact. Patients undergoing treatment should be advised to wear a perineal pad.

'Negatan' is offered in bottles of 4 ounces which cost the pharmacist $1.35 each; 'Negatan' Suppositories are offered in boxes of 6 at $1.05 per box.

Eli Lilly and Company, Indianapolis, Ind.

TOCOPHEREX

Although the therapeutic indications for vitamin E have not been completely established, many physicians are using this drug in the treatment of habitual or threatened abortion and in certain muscular conditions such as amyotrophic lateral sclerosis.

Tocopherex is a distillate of vegetable oils containing alpha, beta and gamma tocopherols with a vitamin E activity equivalent to 24 mg. of alpha-tocopherol per capsule.

In the management of habitual abortion due to vitamin E deficiency, a dose of one to three capsules daily, continued through eight and one-half calendar months of pregnancy, is suggested. For threatened abortion, six capsules within 24 hours is suggested, possibly continued for one or two weeks—with a return thereafter to the maintenance dosage of one to three capsules daily.

For experimental use in muscular dystrophies, a dosage of three capsules two times daily is suggested, combined with generous amounts of a vitamin B complex concentrate.

Tocopherex is supplied in bottles of 25 capsules, costing the pharmacist $1.25, and in bottles of 100 capsules, costing the pharmacist $4.50.

E. R. Squibb & Sons, Inc., New York, N. Y.

EMULSEROL AND EMULSEROL WITH CASCARA

A major objection to the use of mineral oil laxatives has been the evidence that this oil exerts a preferential solvent action on carotene, or provitamin A. It has been demonstrated that mineral oil taken over a period of time may remove and prevent the absorption of carotene contained in foods to such a degree that vitamin A depletion occurs.

However, vitamin A is not absorbed by mineral oil, and The Upjohn Company has added 8000 U. S. P. units of vitamin A per ounce to Emulserol and Emulserol with Cascara in order to return to the body as much or more vitamin A than the mineral oil would remove from the food as carotene.

Prices remain the same, $8.00 a dozen.

The Upjohn Company, Kalamazoo, Mich.

BRANCH MEETINGS

CHICAGO.—Dr. C. F. Lanwermeyer was elected president of the Chicago Branch at its meeting on January 21st. Other officers elected were as follows: First vice-president, L. E. Martin; second vice-president, Dr. H. L. Davis; third vice-president, W. Orlo Knight; secretary-treasurer, Edward E. Vicher.

Byrl Benton, of the Department of Pharmacy, University of Illinois, addressed the meeting on the subject of "The Sub-lingual Absorption of Drugs, with Special Reference to Insulin." Mr. Benton explained the anatomy of the sub-lingual gland and discussed the effective administration of such drugs as nitroglycerin, morphine, and strychnine by this route. He related the history of insulin and described the progress of his work in its sub-lingual administration.

J. W. Snowden, Manager of the Prescription Marketing Service of the Pictorial Paper Package Corporation, addressed the February 18th meeting on "The Promotion of Official Medicines." Mr. Snowden stated that about 90 per cent of the prescriptions written by the physicians of this country are filled by 30,000 pharmacists. He stressed the need for urging customers to consult physicians rather than attempt to treat themselves, for convincing the physician of the advantages in prescribing individualized medication, and for maintaining a professional appearance in the pharmacy.

IOWA STATE UNIVERSITY STUDENT BRANCH.—Harry S. Noel, of Eli Lilly & Co., Indianapolis, addressed the January 14th meeting on the subject of "The Bigness of Little Things." He pointed out the important factors in the successful conduct of a pharmacy and drew on his vast store of personal experiences to illustrate these factors.

LOYOLA UNIVERSITY STUDENT BRANCH.—P. J. Fynn, of the Chemistry Department of Tulane University, presented an interesting demonstration on "The Properties of Liquid Air," at the February 6th meeting. Mr. Fynn outlined the history of the liquefaction of gases in general and discussed the properties of liquid air in particular.

Philip F. Monte, secretary of the Louisiana State Pharmaceutical Association addressed the Branch on "The Physician and the Pharmacist," suggesting that these two professions develop a program of closer coöperation.

MICHIGAN.—Dr. F. E. Schmidt, of Lederle Laboratories, New York, N. Y., presented interesting technicolor motion pictures on the "Management of the Pneumonias" and on the "Treatment of Parkinson's Disease," at the January 16th meeting.

NEW YORK.—Dr. E. J. Teeter, of the Lilly Research Laboratories, discussed "The Anemias, Liver Extracts and Iron," at the February 10th meeting of the Branch. His talk, illustrated with motion pictures and lantern slides, was exceedingly well received.

NORTHERN NEW JERSEY.—The January 13th meeting of the Branch was devoted to a Dental Pharmacy Program under the direction of Professor George C. Schicks, of the Rutgers University College of Pharmacy. Dr. Clifford L. Whitman read a paper on the "Therapeutics of Sedatives, Hypnotics and Analgesics," which was discussed by Dr. Maxwell Lentz. Professor Andrews of Baltimore read a paper prepared by Dr. Dobbs on the work of the Council on Dental Association, which was discussed by Dr. Ernest J. H. Schneider.

Following the papers and discussions, the meeting adjourned to the dispensing pharmacy laboratory where several preparations of interest to the dental profession were demonstrated by members of the student body.

NORTH PACIFIC.—The February 5th meeting of the Branch was devoted to a symposium on the sulfonamides. Professor Fred Drill, of North Pacific College of Pharmacy, served as chairman while the following speakers discussed particular phases of these drugs:

Dr. A. Slesser, the chemistry of the sulfonamides.
Dr. N. M. Phatak, the pharmacology of the sulfonamides.
Dr. L. W. Dickinson, the clinical use of the sulfonamides.
Earl Watkins, of the Oregon Board of Pharmacy, legal aspects of the distribution of the sulfonamides.

PHILADELPHIA.—Dr. William L. Sampson, of the Merck Institute of Therapeutic Research addressed the February 11th meeting on the subject of "The Vitamin B Complex." He reviewed the history of the various vitamin B components and discussed in detail the recent work on pyridoxine and pantothenic acid. With the aid of lantern slides, he showed the effect of deficiencies of these factors in animals.

ST. JOHN'S UNIVERSITY STUDENT BRANCH.—The Lederle Laboratories presented its motion picture on "Pneumonia—Diagnosis and Treatment" at the March 4th meeting of the Branch. The film, depicting the use of chemotherapy and serotherapy, gave students a comprehensive understanding of the management of this disease.

SOUTHERN COLLEGE OF PHARMACY STUDENT BRANCH.—Dr. Sinclair Jacobs, president of Jacobs Pharmacy, Inc., which operates eighteen drug stores in Atlanta, addressed the February meeting of the Branch on the successful practice of pharmacy. An interesting point in Dr. Jacobs' talk was his observation that the South is becoming more and more cosmopolitan and pharmacists must be prepared to adjust themselves to the change.

CITY OF WASHINGTON.—Dr. Ralph W. Clark, of Merck & Co., Rahway, N. J., addressed the January 20th meeting on "The Prescription Department." In his talk, Dr. Clark discussed various phases of prescription department layout, operation, management, and promotion, illustrating each point with personal experiences of pharmacists in various sections of the country.

WASHINGTON STATE COLLEGE STUDENT BRANCH.—A motion picture on "The Diagnosis of Urological Conditions" was presented at the February 12th meeting of the Branch.

Mrs. McRae, president of the Women's Auxiliary of the Washington State Pharmaceutical Association, presented three students of the college with scholarship awards for which funds were raised by the Women's Auxiliary.

To keep step with the "tremendous and continuing changes in the economic and industrial life of the nation" which have created an imperative need for better knowledge of the nature, volume, processes, and trends of business, the Bureau of Foreign and Domestic Commerce has been reorganized into five major divisions of activity:

(1) A division of research and statistics to study, analyze, and direct the general aims and objective of all Bureau activities.

(2) A division of industrial economy to be a clearing house for the exchange of facts between the Bureau and industry.

(3) A division of regional economy to maintain continuous contact with the country's principal economic areas through a field force which will supply local data and observations and assist local business with facts and counsel.

(4) A division of international economy to provide information on foreign economic and commercial affairs and foreign national policies affecting commerce.

(5) A division of commercial and economic information to edit, publish, and distribute information developed by the Bureau.

OBITUARY

FRANCIS E. STEWART

Francis Edward Stewart, former honorary president of the AMERICAN PHARMACEUTICAL ASSOCIATION and one of the organizers of the Council on Pharmacy and Chemistry of the American Medical Association, died in Philadelphia on February 20th. He was eighty-seven years of age.

Dr. Stewart was born in Albion, N. Y., in 1853 and was graduated by the Philadelphia College of Pharmacy in 1876. He studied medicine and was graduated by the Jefferson Medical College in 1879, later taking postgraduate work at the University of Pennsylvania.

He practiced medicine for a time in New York City and in 1894 he organized a scientific department for Frederick Stearns & Co., of Detroit. In 1898 be became chairman of the medical board of Merck & Co. and editor of Merck's *Archives*. He later became scientific director of the H. K. Mulford Company, Philadelphia.

He is survived by two daughters.

ANTON H. SEELY

Anton H. Seely, pharmacist of Cleburne, Texas, died February 19th. He was 61 years of age. He served as president of the Texas Pharmaceutical Association, president of the Veteran Druggists Association, and as a member of the Texas State Board of Pharmacy.

CHARLES WALLIS EDMUNDS

Charles Wallis Edmunds, M.D., president of the United States Pharmacopœial Convention 1940–1950, and professor of pharmacology of the University of Michigan Medical School, died at his home in Ann Arbor, Mich., on March 1st. He was 68 years of age.

Dr. Edmunds had been a member of the U. S. P. Revision Committee since 1910 and served as chairman of the Antianemia Products Advisory Board and chairman of the Committee on Biological Assays.

SIR FREDERICK BANTING

Sir Frederick Grant Banting, of Toronto, Canada, co-discoverer of insulin and co-winner of the Nobel Prize in medicine in 1923, was killed February 21st in an airplane accident on the coast of Newfoundland. Dr. Banting was on his way to England to convey the results of recent research of military significance.

IN THE NEWS

Thirty-two per cent of the selective service registrants thus far have been rejected as physically unfit, according to Col. L. G. Rountree, chief of the medical division of the Selective Service System. Dental defects caused most rejections. Twenty per cent of the men rejected were weeded out by local examining boards while twelve per cent were rejected by induction examining boards.

Among the commodities placed under the provisions of Export Control by President Roosevelt in the interests of national defense are belladonna, atropine, cadmium, carbon black, coconut oil, cresylic acid and cresols, glycerin, palm-kernel oil, pine oil, titanium, borax, boric acid, and phosphoric acid.

Dr. H. Evert Kendig, Dean of the School of Pharmacy of Temple University, and President of the American Association of Colleges of Pharmacy, has been appointed to represent the college association in the National Committee on Education and Defense, sponsored by the American Council on Education and the National Education Association.

Merck & Co., Inc., has announced plans for the construction of a new manufacturing plant in the Stonewall District of the Shenandoah Valley of Virginia, three miles south of Elkton. The new plant will employ about 300 persons.

Dr. Robert L. Swain, Editor of *Drug Topics*, represented the AMERICAN PHARMACEUTICAL ASSOCIATION at the Ninetieth Anniversary Dinner Dance of the New York German Apothecaries Society, held at the Hotel Pennsylvania, February 20th.

The Department of Health of the City of New York has designated March as "Cancer Information Month" and a special program of coöperation with pharmacists has been arranged. The Health Department is supplying pharmacists with window displays depicting "Landmarks of Cancer Control," and a symposium on "Pharmacy's Part in Cancer Control" has been arranged under the joint auspices of the New York City Cancer Committee, the Department of Health and the Association for the Advancement of Professional Pharmacy, at the Hotel Pennsylvania, March 18th, at 8:30 P.M.

The Philadelphia College of Pharmacy and Science celebrated the 120th anniversary of its founding on Monday, February 24th. Dr. Henry Butler Allen, Director of the Franklin Institute of the Commonwealth of Pennsylvania, delivered the principal address at the Founder's Day exercises.

Every student of the Southern College of Pharmacy, Atlanta, has joined the AMERICAN PHARMACEUTICAL ASSOCIATION.

Fred W. Connolly, of Dorchester, Mass., has donated a copy of the Fourth Decennial Revision of the U. S. P., which has been placed in the Library of the AMERICAN INSTITUTE OF PHARMACY. Mr. Connolly has made frequent donations to the Museum of the A. PH. A., all of which have contributed to the promotion of the work and various interests of the profession; thanks are extended to him.

Antonio G. Llamas, Dean of Pharmacy at the Manila College of Pharmacy and Dentistry, was elected chairman of the Philippine Pharmaceutical Convention, held February 20th. Dean Llamas studied at the Philadelphia College of Pharmacy and Science.

Color names, developed for the description of drugs in the National Formulary and the United States Pharmacopœia by Kenneth L. Kelly, research assistant in the Association's laboratories, are being considered for use in the next revision of the Danish Pharmacopœia. Dr. F. Reiners, of the Farmakopekomissionen Laboratorium, Copenhagen, requested complete reports on Mr. Kelly's work last October and since has ordered copies of the Munsell Book of Color and other material needed to apply the new system of designating colors to drugs.

Since the acceptance of this new system of color names by the Intersociety Color Council, several groups in other fields have become interested in its application. The action of the Danish Pharmacopœia Commission indicates the growing recognition of the importance of a scientific basis for designating the colors of drugs.

Valerian and its preparations would be restricted by physicians' prescriptions under a bill introduced in the Michigan legislature, and persons presenting such prescriptions for compounding would be recognized to place his fingerprint on the prescription and sign his name and address to it. Pharmacists would be required to report the filling of such prescriptions to the commissioner of the Michigan State Police.

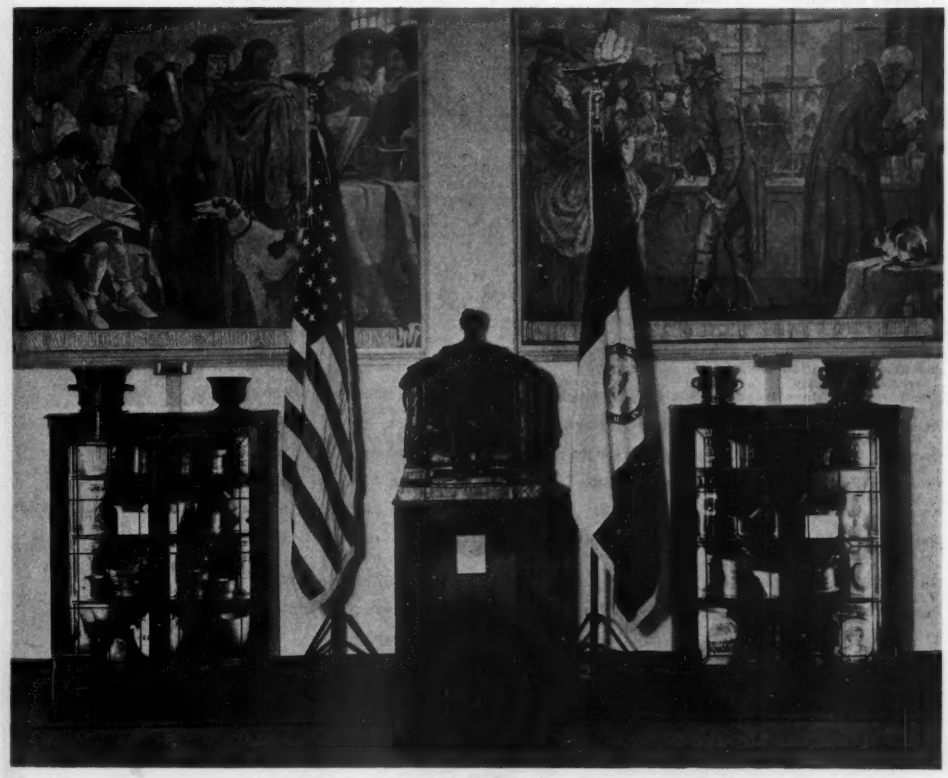
"Detroit the Dynamic" is making great plans for the eighty-ninth annual convention of the AMERICAN PHARMACEUTICAL ASSOCIATION, to be held in that city August 17th to 23rd. Headquarters will be the Hotel Statler, and preparations are being made for a record attendance.

General Chairman B. A. Bialk has appointed the following Executive Committee to take charge of various phases of the convention work:

Finance, R. L. McCabe; Publicity, E. R. Jones; Hotel, A. J. Meyer; Meeting and Exhibits, H. A. K. Whitney; Plant Science Seminar Auxiliary, C. C. Glover; Registration, L. W. Rowe; Entertainment, W. M. Chase; Transportation, R. W. Klein; Interprofessional Relations, R. T. Lakey; Advisory, L. A. Seltzer; Membership, E. J. Meyer; Courtesy, F. O. Taylor; Recording Secretary, D. T. Meredith.

A bill to amend Section 2800, Chapter 26, of the Internal Revenue Code of 1939, to reduce the tax on non-beverage ethyl alcohol used in the manufacture of medicinal preparations to $2.00 per proof gallon, has been introduced in the House of Representatives by Congressman Estes Kefauver, of Tennessee. The AMERICAN PHARMACEUTICAL ASSOCIATION has assisted in the drafting of this bill, believing that a lower tax on alcohol will enable pharmacists to make more of their own pharmaceuticals and will lower the cost of medicines to the public.

Apothecary jars and mortars of the late David Costelo, of New York, have been purchased by Josiah K. Lilly and presented to the Philadelphia College of Pharmacy and Science. This group of over 150 rare old pieces is believed to have been the largest privately owned collection in this country, and is valued at several thousands of dollars.



The Costelo-Lilly Collection of apothecary jars and mortars on display.

Local and Student Branches

Name	President	Secretary	Meeting Date
Baltimore	M. J. Andrews	R. S. Fuqua, 1432 Carswell St.	
Chicago	Lawrence Templeton	E. E. Vicher, 1524 S. Lombard Ave., Berwyn	Third Tuesday
City of Washington	Kenneth L. Kelly	L. G. Gramling, Geo. Wash. Univ.	Third Monday
Michigan	Walter M. Chase	Bernard Bialk, 11665 Hamilton Ave., Detroit	
New York	Leonard W. Steiger	Frank P. Pokorny, 115 W. 68th St.	
Northern New Jersey	R. A. Deno	C. L. Cox, 1 Lincoln Ave., Newark	
Northern Ohio	Joseph J. Opatrny	Douglas B. Pew, 3670 E. 163rd St., Cleveland	
North Pacific	Ed. Stipe	F. A. Geue, 1220 S. W. Stark St., Portland, Ore.	
Northwestern	E. B. Fischer	C. V. Netz, College of Pharmacy, Minneapolis	
Philadelphia	Arthur Osol	R. N. Blythe, c/o Smith, Kline & French Co.	
Pittsburgh	E. C. Relf	F. S. McGinnis, 3601 Fifth Ave.	Third Tuesday
Western New York	J. Raymond Bressler	George W. Fiero, 3502 Main St.	
STUDENT BRANCHES			
Alabama Polytechnic	Charles R. Barron	Beth. M. Murphy, Box 188, Auburn	
Connecticut College of Pharmacy	Charles Blumenthal	Robert Sandals, New Haven	
Ferris Institute	Henning Engmark	Morris Fockler, Ferris Institute	
George Washington University	F. D. Cottrill	G. O. Chilcoat	
Loyola University	Urban J. Hecker	Miss Melanie Cassou, Loyola School of Pharmacy	First Thursday
Louisville College of Pharmacy	John J. Furlong	H. L. Alexander, 3rd & Oak Sts., Louisville	
Pittsburgh College of Pharmacy	Harry Bonchosky	George Kelly, 3366 Webster Ave.	
Purdue University School of Pharmacy	George E. Osborn	J. H. Houseworth, College of Pharmacy	
Rhode Island College of Pharmacy and Allied Sciences	Lawrence J. Bartley	John Stadnick, Rhode Island College	
St. John's University	Lester Rosenstein	Sister M. Etheldreda, 95 Bushwick Ave.	
Southern College of Pharmacy	J. R. Eaves	Annette Williams	
State College of Washington	Carlton Peterson	Haakon Bang, Box 124, Pullman	
State University of Iowa College of Pharmacy	George T. Weirick	Delpha L. Donner, Eastlawn, Iowa City	
Temple University	Alton G. Grube	Marie Steigerwalt, Andreas, Pa.	
University of California	H. K. Iwamoto	Peggy Kreizinger, Univ. of California	
University of Southern California	Morris Tenenbaum	Josephine Rawie, 3570 McClintoch, Los Angeles	
University of Florida	J. F. Cooley, Jr.	R. H. Weaver, Jr., 1634 W. Univ. Ave., Gainesville	
University of Mississippi	Harry Lynch	Marguerite Holmes, University, Miss.	

National Associations

Name	President	Secretary	Meeting Place	Date
American Association of Colleges of Pharmacy	H. E. Kendig	Zada M. Cooper, Iowa City, Iowa	Detroit, Mich.	August17–18,'41
American Drug Manufacturers Association	S. De Witt Clough	Carson P. Frailey, 506–7 Albee Bldg., Washington,	White Sulphur Springs, W. Va.	
American Pharmaceutical Manufacturers' Association	Bordner F. Ascher	S. Barksdale Penick, Jr., 132 Nassau St., New York City	Swampscott, Mass.	June 22, '41
Canadian Pharmaceutical Association	W. A. McKnight	O. M. Hurrell, Toronto	Vancouver	1941
Federal Wholesale Druggists Association	Sidney C. James	Ray C. Schlotterer, 41 Park Row, N. Y. C.	Hot Springs, Va.	
National Association Boards of Pharmacy	S. H. Dretzka	H. C. Christensen, 130 N. Wells St., Chicago, Ill.	Detroit, Mich.	August17–18,'41
National Association of Retail Druggists	Sam J. Watkins	John W. Dargavel, 205 Wacker Drive, Chicago, Ill.	Cleveland, O.	Oct. 6–10, '41
National Wholesale Druggists' Association	P. A. Hayes	E. L. Newcomb, 330 W. 42nd St., N. Y. C.	White Sulphur Springs, W. Va.	
Proprietary Association	C. S. Beardsley	C. P. Tyrrell, Syracuse, N. Y.	New York City	
CONFERENCES AND SEMINAR				
Conference of Pharmaceutical Association Secretaries	J. J. Shine	Mrs. C. B. Miller, Topeka, Kans.	Detroit, Mich.	August '41
Conference of Pharmaceutical Law Enforcement Officials	R. P. Fischelis	M. N. Ford, Columbus, O.	Detroit, Mich.	August '41
National Conference of Pharmaceutical Research	W. J. Husa	J. C. Krantz, Jr., Baltimore, Md.	Detroit, Mich.	August '41
National Drug Trade Conference	Carson P. Frailey	Rowland Jones, Jr., 1163 National Press Bldg., Washington, D. C.		
Plant Science Seminar	John E. Seybert	Elmer H. Wirth, 833 S. Kenilworth Ave., Oak Park, Ill.		August '41